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# MEDICAL REPOSITORY.

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VOL. VI.—No. I.

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## ARTICLE I.

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*An Account of an HEMORRHAGIC DISPOSITION existing in certain Families. By JOHN C. OTTO, M. D. of Philadelphia.*

ABOUT seventy or eighty years ago, a woman by the name of Smith, settled in the vicinity of Plymouth, New-Hampshire, and transmitted the following idiosyncrasy to her descendants. It is one, she observed, to which her family is unfortunately subject, and had been the source not only of great solicitude, but frequently the cause of death. If the least scratch is made on the skin of some of them, as mortal a hemorrhagy will eventually ensue as if the largest wound is inflicted. The divided parts, in some instances, have had the appearance of uniting, and have shown a kind disposition to heal; and, in others, cicatrization has almost been perfect, when, generally about a week from the injury, an hemorrhagy takes place from the whole surface of the wound, and continues several days, and is then succeeded by effusions of serous fluid; the strength and spirits of the person become rapidly prostrate; the countenance assumes a pale and ghastly appearance; the pulse loses its force, and is increased in frequency; and death, from mere debility, then soon closes the scene. Dr. Rogers attended a lad, who had a slight cut on his foot, whose pulse "was full and frequent" in the commencement of the complaint, and whose blood "seemed to be in a high state of effervescence." So assured are the members of this family of the terrible consequences of the least wound, that they will not suffer themselves to be bled on any consideration, having lost a relation by not being able to stop the discharge occasioned by this operation.

Various remedies have been employed to restrain the hemorrhagies—the bark, astringents used topically and internally,

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strong styptics, opiates, and, in fact, all those means that experience has found serviceable, have been tried in vain. Physicians of acknowledged merit have been consulted, but have not been able to direct any thing of utility. Those families that are subject to certain complaints are occasionally relieved by medicines that are inefficacious when applied to others; and family receipts are often of greater advantage in restoring them, than all the drugs the materia medica offers for that purpose. A few years since the sulphate of soda was accidentally found to be completely curative of the hemorrhages I have described. An ordinary purging dose, administered two or three days in succession, generally stops them; and, by a more frequent repetition, is certain of producing this effect. The cases in which the most powerful, and apparently the most appropriate remedies have been used in vain, and those in which this mode of treatment has been attended with success, are so numerous, that no doubt can exist of the efficacy of this prescription. The persons who are subject to this hemorrhagic idiosyncrasy, speak of it with the greatest confidence. Deceptions may take place from accidental coincidence; but when a complaint has often occurred, and been almost uniformly fatal without the administration of a certain medicine, and has constantly yielded when it has been given, scepticism should be silent with regard to its utility. Nor should our inability to account for the fact, upon the theory and principles we have adopted, be conceived a sufficient reason for disbelieving it. An attempt to explain the mode of operation of this valuable remedy might give birth to much speculation. As the affection has been attended with mortality, and there is generally a disposition to give relief as early as possible, experiments have not been made with the other neutral salts to learn their comparative effect; nor have medicines been tried whose operation might be supposed to be similar. The prescription being known to the whole family, application is rarely made to a physician, and when it is, it is rather with a view of directing him how to proceed, than of permitting him to make a series of trials and observations which might be at the hazard of the life of the patient. The utility of the sulphate of soda cannot arise from its debilitating effects, since it has been found serviceable when the previous depletion has been great, the strength much exhausted, and the system has evidenced symptoms of direct debility. Perhaps time will elucidate its mode of operation, and some general principles may be developed that may be applied to advantage in restraining ordinary hemorrhages; but



reasoning upon what has been discovered to be useful in idiosyncracies, and applying it to the general constitution of human nature, must necessarily be vague and productive of occasional evil. In every case, however, a doubtful remedy is preferable to leaving the patient to his fate. The sulphate of soda has constantly succeeded when administered; but the prescription being in the possession of the Shepard family, the descendants of Smith, and the cases that have been attended by physicians not being very numerous, it is impossible to ascertain the various states of the system in which it has been given, or to form any correct conclusions respecting its manner of acting. No experiments have been made on the blood to discover if any or what changes take place in it.

It is a surprising circumstance that the males only are subject to this strange affection, and that all of them are not liable to it. Some persons, who are curious, suppose they can distinguish the bleeders (for this is the name given to them) even in infancy; but as yet the characteristic marks are not ascertained sufficiently definite. Although the females are exempt, they are still capable of transmitting it to their male children, as is evidenced by its introduction, and other instances, an account of which I have received from the Hon. Judge Livermore, who was polite enough to communicate to me many particulars upon this subject. This fact is confirmed by Drs. Rogers and Porter, gentlemen of character residing in the neighbourhood, to whom I am indebted for some information upon this curious disposition. When the cases shall become more numerous, it may perhaps be found that the female sex is not entirely exempt, but, as far as my knowledge extends, there has not been an instance of their being attacked.

The persons subject to this hemorrhagic disposition are remarkably healthy, and, when indisposed, they do not differ in their complaints, except in this particular, from their neighbours. No age is exempt, nor does any one appear to be particularly liable to it. The situation of their residence is not favourable to scorbutic affections or disease in general. They live, like the inhabitants of the country, upon solid and nutritious food, and when arrived to manhood, are athletic, of florid complexions, and extremely irascible.

Dr. Rush has informed me, he has been consulted twice in the course of his practice upon this disease. The first time, by a family in York, and the second, by one in Northampton county, in this state. He likewise favoured me with the fol-

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lowing account, which he received some years since from Mr. Boardley, of a family in Maryland, afflicted with this idiosyncrasy.

"A. B. of the State of Maryland, has had six children, four of whom have died of a loss of blood from the most trifling scratches or bruises. A small pebble fell on the nail of a forefinger of the last of them, when at play, being a year or two old: in a short time, the blood issued from the end of that finger, until he bled to death. The physicians could not stop the bleeding. Two of the brothers still living are going in the same way; they bleed greatly upon the slightest scratch, and the father looks every day for an accident that will destroy them. Their surviving sister shows not the least disposition to that threatening disorder, although scratched and wounded. The father gave me this account two days since, but I was not inquisitive enough for particulars."

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### ARTICLE II.

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OBSERVATIONS *on the NATURAL HISTORY of the Village of KINDERHOOK, and its Vicinity.\** By the Rev. DAVID WARDEN, *A. M. late of that place, but now of Kingston, in Ulster County, (N. Y.)* Communicated by PETER WILSON, *LL. D. &c.*

THE town of Kinderhook, in Columbia county, State of New-York, is situated on the east side of Hudson River, 42 deg. 36 min. N. lat. It is 13 miles N. from the city of Hudson, 20½ miles S. by E. of Albany, 25 W. by N. of Stockbridge, in Massachusetts, and 140 N. of New-York.

From almost every spot in Kinderhook, the Blue Mountains† may be seen; and every beholder must be delighted with them. Sometimes the whole range appears tinged with the colour of a delightful blue. The appearance is variegated and irregular. In winter the reflection of the sun, reverberating from the snow which covers them, has a grand effect. Sometimes their tops are veiled in a cloud. The people prognosticate a change of weather from the mist or fogs which appear

\* These observations apply, with the requisite allowance, to all the interior, and middle parts of the State of New-York, and the corresponding parts of the adjoining States.

† For a description of these mountains, see the report on the mineralogy of New-York, in our vol. i. p. 295.

on the top and sides of these mountains. In summer, if they are enveloped with fogs or vapours, so that their summits are not visible, it is a sure indication of rain; and in winter, the same appearance indicates snow. If every part of the mountains is seen distinctly a sudden fall of rain or snow never takes place.

*Soil.*

The soil is exceedingly various. Contiguous to the village it is in general sandy, and extremely dry. In some parts the sand is of a red, in others of a white colour. In some places there is found a black loamy soil; and in spots, lately cultivated, it approaches to clay. These soils are likewise mixed in various proportions.

*Strata of Earth.*

In digging a well thirty feet in depth, the strata of earth appeared as follows: One foot and an half of sandy vegetable soil, five feet of coarse red sand; under this a layer of whitish clay of four feet, then six feet of whitish sand mixed with small shells, then four and an half feet of red clay with streaks of white, and underneath six and an half feet of clay of a brownish colour mixed with small stones.

When we consider how immense must be the quantity of leaves, which, for ages, have fallen from the trees, and the trees themselves falling and rotting on the surface of the earth, is it not surprising that so little of a blackish earth is seen? One would expect to find, from such leaves and trees, an entire morass every where; instead of this, there are few newly cultivated lands among the thickest woods that have more than half a foot of blackish earth. If this blackish earth is, by some natural process, converted into red virgin earth, we might expect to find this virgin earth many feet deep; it is, however, seldom more than one. How such an immense quantity of wood and leaves vanish without the production of much earth seems unaccountable.

I have been informed that it was a custom with the Indians to set fire to the woods, when they wished to rouse many deer, in order that they might shoot them more conveniently. If this was the case, the leaves and decayed trees would of consequence be consumed, as far as the flames reached. But this burning of the woods must have been confined to particular spots, and it is hardly probable that it ever extended over the whole surface of the country.



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*Bog.*

On the left side of the road leading to Kinderhook Landing, there is an extent of bog of about 150 acres, which, if prepared and made dry, would be excellent fuel. It is covered with coarse grass and small shrubs; but not a vestige is seen of the muscous plant, or *sphagnum palustre*, which overspreads the bogs of Ireland. The bog has been much assisted in its growth by several springs of water, which issue from the foot of an eminence adjoining the road. The water finding no vent, and covering the trees, shrubs, and an immense quantity of withered leaves, blown into it by the wind, from the surrounding height of woods, increased the depth of the bog, and has rendered its growth very rapid. The water has now found vent, which may be the means of retarding its growth, as peat or turf requires much moisture. At present it is nearly four feet above its original surface. It is of a black colour, and very much resembles the peat of Ireland. It is the property of Peter Van Schaack, Esq. and will, no doubt, prove a valuable acquisition, when the lands are cleared, and wood for fuel becomes scarce. The bog could be drained at little expense, and if drained, would produce excellent crops. But the most useful plan will be to save it for fuel.

About half a mile N. W. from town there is another piece of bog one mile and a half in length, and one quarter of a mile in breadth. It is three feet in depth, of a dark brown colour. A few years ago it caught fire and burned for a month, in spite of much labour used to extinguish it.

About two miles S. E. from town there is another considerable extent of bog, called the *Long-Vlie*. It is about a mile in length and one quarter of a mile in breadth. In some places it is seven feet deep. It is surrounded by hills, except a small opening to the north. A part of it has lately been drained, and has produced hay of a good quality. The surface of the bog in general is overspread with coarse grass.

About a mile farther S. is another, called the *Lake-Vlie*, about half a mile broad and three quarters of a mile in length.

The peat of these bogs is close in its texture, and in many parts it is very black. Like that of Ireland, it, no doubt, contains fossil oil, calcareous and argillaceous earth, and volatile and fixed alkali. Along its borders the vegetable roots are not decomposed, owing to their not having been long enough exposed to the air.

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As pine trees are often swept into this bog, and soon buried in it, by its growth, it is probable, that, at some distant day, it will be sought for, with an iron spit, as the Irish do, in searching for like trees in the bogs of Ireland, to serve them for firing, and to afford light to those who cannot purchase candles. The great quantity of turpentine which this wood contains, would cause the American pine, when dry, to burn like a torch.

### *Creek.*

What contributes much to the beauty of Kinderhook is the creek, which runs along the east side of the town. It originates from a spring of water, which issues from the bottom of a hill, about 15 miles N. of the celebrated medicinal waters of Lebanon, and flows past them at the distance of 200 yards, describing a N. E. by E. course, but in many parts very irregular. In proportion to the distance from its source, it increases in size, by the conflux of Claverack creek, and several considerable streams, till it mingles its waters with those of the Hudson river, about four miles below Kinderhook Landing.

Four miles from town, and four from the Hudson river, there are three falls of water in the creek, all of which are truly magnificent. Each of them is nearly 200 feet in breadth; two of them are 30, and the third, which is nearest to the Hudson river, is 40 feet in perpendicular height. When there is much water in the creek, it rages over the rocks, presenting a grand appearance. The ear is struck with the rude majestic noise, while the trees shooting forth from the cliffs of the impending rocks, and spreading their branches over the rapid stream, make the scene truly picturesque, so that it delights the imagination of every spectator.

At the close of winter, when the ice begins to dissolve, the scene cannot be surpassed; when large masses of ice are hurled over the rocks by the waters of the melted snow, and are dashed to pieces with a noise which strikes the hearer with awe and horror.

These falls, although little known, are thought by some not to be inferior to the *Cahoes*, either in variety, in grandeur, or in beauty. A person of improved taste, viewing one of the falls from a romantic precipice, exclaimed, "that the scene appeared to have a much better effect than that of the *Cahoes* of the Mohawk; and that the roar of the waters over the broken rocks was more enchanting."

There are few houses on the banks of the creek, and its

beauties can only be seen by those who are willing to endure the fatigue of scrambling through thick woods. The land is yet uncleared, and there are but a few corn or grass enclosures, although the soil is more fruitful, and the situation more inviting than that of any place yet cultivated. In many places, in spring, the water overflows the banks, and leaves behind it a prolific slime, which increases the fertility.

From the quantity of decayed leaves, rotten wood, and plants, in a state of putrefaction, which cover the borders of the creek, and mix with it, we might be led naturally to suppose that its waters are very impure, which is not so; the water being pleasant, and possessing no unhealthful quality.

The creek is often diverted from its channel by large trees, driven into it by the wind, which fasten to some bank, and intercept the earth, stone, &c. carried along by the current. Owing to this, some beautiful islands have gradually increased in size, and some of them are now covered with trees as tall as any of those of the adjoining wood.

Some of the oldest people of the place say that the creek has suffered a considerable diminution. The cause of this appears very obvious. From the place where the creek takes its rise to the North river, of late years, the woods have been destroyed, and the lands cultivated.

It is well known, that trees absorb much moisture, and lessen the quantity of spontaneous evaporation; consequently, when destroyed, the creek will be deprived of one of its constant supplies. In proportion as the land is cleared, the water will diminish. When the population increases, when land is more equally divided, more valuable and more cultivated, some of the most beautiful streams will dry up. To this cause it is owing, that mill-races lose their former quantity of water, and lessen by degrees, till at last they cease to flow.

#### *Lakes or Ponds.*

About two miles N. E. of Kinderhook, bordering on Chatham, are three beautiful little lakes, or ponds. The largest is, by the people, called *Fish Lake*; the next in size has got the name of *Round Lake*, and the third, that of *Little Lake*. The first mentioned is about a mile and a quarter in length, from N. to S. and above a quarter of a mile in breadth, from E. to W.

The *Round Lake* is about half a mile in circumference; and the *Little Lake* not so large. They form a communication with each other, and with Kinderhook creek. The bed



of the lakes, in some places, is gravel, in others mud. In many parts of each pond, the waters are 30 feet in depth, and abound with fish, viz. yellow perch, eel, and other fresh water fish.

A considerable extent of the surface of the lakes is covered with the pond weed. It floats on the surface, the under part of the leaf being in contact with the water. It puts forth yellowish blossoms in the beginning of August. The fish are fond of its shade, especially the pickerel.

The lakes are almost encompassed on every side with rising hills, whose woody tops rise one above another. Their banks are covered with trees and shrubs. In the midst of the largest is a small island, which, viewed from the hill, appears beautiful and picturesque. All the objects of the scene are naturally romantic, and well deserve a visit from those whose taste has been formed for such enjoyment.

A person of taste, with whom I first visited it, after viewing the whole, observed, "that no pencil could paint, nor words describe the delightful variety of objects." We rode on horseback round the borders of the lakes, and crossed over the stream which unites two of them; though we had much difficulty in ascending and descending some eminences, where the only passage is between huge trunks of pine and oak, whose branches form a solemn shade.

In 1786, an iron forge was erected on the stream which runs from these lakes. A mound of earth was raised, and a sluice to confine the water, or suffer it to flow at pleasure. It was allowed occasionally to rise six feet above its natural level, overflowing the meadows, swamps, and borders of the lakes, which were covered with wood.

The banks being overrun with noxious weeds and corrupted vegetables, and laid under water, by the influence of the intense heat of the sun, emitted pestiferous vapours, and impregnated the air with unwholesome exhalations, which, as far as they spread, created an obstinate malignant fever, that proved fatal to many. The people imprudently remained on the spot, and sought no medical aid. The baneful effects of it extended two miles in circumference, and swept about 40 or 50 persons from the stage of life. It was complained of to the Grand Jury as a public nuisance.

#### *Air and Weather.*

The air and weather experienced in Kinderhook, is much the same as that of other places in the Northern States of Ame-

rica, which are at the same distance from the sea, having a similar quantity of cleared lands, &c. The winters are uncommonly cold, and the heat of the summer is almost insupportable. In winter, when the wind blows from the N. W. the cold is very intense, and has a more piercing keenness than when it blows from any other quarter, on account of the extensive surface of snow-capped mountains and other land which it passes over. The air, when inhaled, excites violent coughing; and if the hand, during a keen frost, is applied to iron, or other metallic substances, they will blister it, as if red hot. The moisture of air arising from respiration is immediately converted into snow. A degree of cold is experienced which one scarcely expects in such a latitude. The good state of health which the people of Kinderhook enjoy, with the many instances of individuals arriving to a great age, evinces that the air is very pure and salubrious. It has never been subject to any general fatal sickness; and, compared to the population of other towns, there are fewer deaths than in any other settlement in the state. Many die from mere old age, free from the oppressions of disease\*.

*Frost, Snow, &c.*

The snow, in general, begins to fall about the last of October, and remains on the earth until the middle, and oftener to the latter end of March. It sometimes falls very suddenly, even so deep as 18 inches in six hours. It is often driven by the wind into drifts of six or seven feet. In winter the sun is amazingly bright, the sky clear, and the air pure and enlivening. The heat of the sun, joined with the internal heat of the earth, daily diminishes the snow in the severest season, which is supplied by a fall of more. When the cold is great, the snow is uncommonly fine, and dry to the touch. In this place there is not half the snow which was formerly. I have been informed by persons of undoubted veracity, that they remembered the time when, during the greatest part of the winter, the snows were from two to three feet deep, and were more frequent than at present. Formerly it was customary for the people to assemble and cut passages through the snow,

\* Isaac Vosburgh, of this place, was 105 years of age when he died. Eliza Vosburgh was 93. Another woman of the same name was 95; and three brothers, each above 90. Mrs. Pryn is 84, and quite healthy. A slave of Mr. Van Alen's, an African called Cato, is an 100; and a black man of Mr. Vosburgh's is of the same age; both active, and performing manual labour.

which they called *breaking the roads*. An act was passed for the purpose of forcing them to assemble, in case of refusal. This is a convincing proof that the climate of this region has underwent some considerable change.

The ice is formed so rapidly that the North-River, which ebbs and flows with the sea, as well as the running water of the creek, will be so frozen in one night, that people are seen to walk across in the morning.

The nature of the soil of Kinderhook, which is sandy, prevents the frost from penetrating far into the earth. After two months frost, I dug in a garden, and found that, where snow was, the frost was not deeper in the earth than eighteen inches. In general, it thaws two or three times during the winter; but the thaws are of short duration: there is always more or less of thaw in the month of January. The frosts of some winters do material injury, destroying vegetables and trees. In moist springs, when it thaws by day and freezes by night, the vegetation is very much injured, and the flower buds of the fruit-trees destroyed. If there is no snow on the ground during a frost, after the seed is committed to it, the seed is often destroyed, and all the hopes of the farmer are defeated. As a proof that snow protects the seed in the ground, and serves to promote the growth of the plant, what took place last spring, under the inspection of a very intelligent and observing farmer, need only be mentioned. Seed wheat was sown in a field two days before the commencement of a keen frost, which was followed with a considerable fall of snow, that remained on the field during the winter. The frost was so intense as to prevent any immediate vegetation of the wheat. In the latter part of winter, a sudden thaw dissolved the snow, and the shoots of wheat appeared full two inches in length. The covering of snow must have prevented the cold air from having any effect upon the earth, while the internal heat of the earth must have melted the frost and promoted the natural growth of the plant. It has been a matter of surprise that the great moisture from the snow does not altogether drown the plant: it is well known, however, that the moisture occasioned by the perpetual dissolution of the snow is more powerfully attracted by the snow than it is by the earth. This is the case; a cavity is formed between the snow and the earth, which gives room for the plant to shoot forth, and the soil is kept in a fit state for its nourishment. Some idea of the general continuance of the frost is obtained from the ice of the Hudson River. Some years it opens about the first, and



plosions as take place often for several hours together. The rumbling noise often resembles that of a thousand load of stones tumbled from a precipice. Sometimes it begins slow, and increases till the moment it is no longer heard. At other times it commences with claps so terrible as to threaten universal dissolution; while the noise becomes weaker and weaker, till it is heard no more.

On the 20th of July, 1800, after a fine morning, black clouds began to form themselves—the air darkened—the wind shifted, and, at last, blew in a kind of whirlwind: flashes of lightning darted forth from all quarters of the heavens: the thunder roared, and shook the houses to the foundation: the rain fell in torrents: the creek on a sudden overflowed its banks: the roads, which are quite level, were covered with six inches depth of water. For a few minutes the storm was accompanied with hail, which had the appearance of ice. Some of the hail-stones I measured immediately after falling, which proved to be one inch and a half in circumference. The scene presented wonderful grandeur, but terror prevented the enjoyment of it. Sometimes the lightning darted towards the earth in a zig-zag manner. At other times it represented the appearance of streamers sporting in the wind. In one quarter, what is called the forked lightning darted forth of a livid bright colour. The storm lasted above an hour, and did considerable injury. A man was struck dead at Union village, about ten miles from Kinderhook. Several trees were struck, their leaves scorched, and their branches torn asunder. A store in the city of Hudson was much injured, but not burnt. About five miles from Kinderhook it struck a barn full of corn, and consumed the whole to ashes. It rained violently, and much water was instantly thrown upon it, which had no effect in quenching the flame. It killed a horse in an apartment of the same building, and did not injure another standing close to him.

In the summer of 1799, during a storm of thunder and lightning, the store belonging to Mr. Van Vleck, of Kinderhook, was struck on the roof. It stripped the shingles from it ten feet in length, and a foot and a half in breadth. An upright beam conducted it into a lower apartment. A number of pewter tea-pots were placed on a board parallel to the upper floor. About the breadth of a sixpence was melted on each side of eleven of them. The melted parts were black, and resembled the appearance made by exposing the same metal to the flame of a candle. Some of the melted parts

had the appearance of small concentric circles, as if formed by the nicest art. A division was made in the shelves, in a perpendicular direction, with boards fastened by nails, which attracted the lightning, and tore the boards asunder in the direction of the nails. The tea-pots were wrapped in a double fold of brown paper, which had not the least appearance of being burned, nor even the vestige of smoke appearing on it. It melted the sides of pewter jugs standing on the same board, in the other side of the line formed by its direction into the apartment. A cask of powder was placed on the end of the same board, and was not more than two feet from the outermost jug. After passing along one side of the pewter, it must have returned by the other, else the board would, no doubt, have conducted it to the powder, and blown up the store.

Three men were standing in the store. One of them nearest the door felt the effects of the lightning in its escape out of the house. He was rendered deaf, and continued so for several days. At the same time that the lightning penetrated into the inside of the store, the outside was struck, and an iron staple torn out, with a piece of wood, close to one of the windows in the gable end of the house.

The end of the house, very near the ground, being struck; while, at the same time, the roof was struck several feet from the end, seems to establish the truth of the theory of a double current of electric matter. It is probable that a portion of the earth surrounding the store was electrified with the contrary electricity of that of the cloud above it, and that the store served as a conductor to unite the opposite powers; the one flash descending from the cloud, the other ascending from the earth.

Colonel Vosburgh's store had in it a number of scythes rolled up in straw, which attracted the lightning, and consumed the straw to ashes, without doing any injury except tearing two of the boards from the side of the house.

A man, sitting at the breakfast table, near to the iron in the fire-place on which the wood for fuel is burned, was struck dead, without any appearance of injury done to any part of his body. The upright stalk of iron attracted it very powerfully, and on passing from the iron it took his body in preference to the floor or wall, it being a more powerful conductor. Every part of his body preserved the same appearance as that of a man dying in a natural way.

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The end of the house, very near the ground, being struck, while, at the same time, the roof was struck several feet from the end, seems to establish the truth of the theory of a double current of electric matter. It is probable that a portion of the earth surrounding the store was electrified with the contrary electricity of that of the cloud above it, and that the store served as a conductor to unite the opposite powers; the one flash descending from the cloud, the other ascending from the earth.

Colonel Vosburgh's store had in it a number of scythes rolled up in straw, which attracted the lightning, and consumed the straw to ashes, without doing any injury except tearing two of the boards from the side of the house.

A man, sitting at the breakfast table, near to the irons in the fire-place on which the wood for fuel is burned, was struck dead, without any appearance of injury done to any part of his body. The upright stalk of iron attracted it very powerfully, and on passing from the iron it took his body in preference to the floor or wall, it being a more powerful conductor. Every part of his body preserved the same appearance as that of a man dying in a natural way.

There is much lightning seen every week during summer, without thunder. It sometimes continues for whole evenings sporting among the clouds, and affording a grand spectacle. When this is the case, its flashes are of a circular form. Such lightning must arise from large quantities of the electrical fluid, which explodes as soon as produced; the clouds having no communication with the earth. Sometimes, after such lightning, there are violent showers of rain, which are probably owing to the union of the electrical parts of contrary clouds. But it is an observation made by many, that when there is lightning without thunder, during dry, clear weather, it is a sure sign of heat in the atmosphere.

#### *Winds.*

It is remarkable that the winds in this place blow, in general, either from the south or north, or from the north-west (which last is called the continent wind), and that they vary but little throughout the year from a northern or southern direction. The cause of this seems to originate from this tract of land, along the North-River, being level for a considerable distance; and having the range of Blue Mountains parallel to it on one side, and a ridge of high hills on the other, running nearly in a direction from north to south, which is the course of the North-River, and which directs the current of the atmosphere, though these ranges are twenty miles asunder. When a wind blows from any point of the N. E. or N. W. quarter, it is reflected by the sides of the hills or mountains, and in the open plain forms a north wind. On the contrary, when it blows from any point between the S. and E. or S. and W. its course is altered by the position of the mountains, and it acquires a more southern direction. If the plain was less broad, it is probable that the wind would be much more violent, on account of being more compressed by the resistance of the mountains.

Here it may be noticed, that, after a sudden melting of the snow, there is almost always a sudden gust of wind.

From an accurate register of the winds which I have kept during twelve months, it appears that they blow more in a southern than in a northern direction. During the summer, and more particularly towards its latter end, the wind is, in general, from the S. During the season of winter, especially in the months of November, December, and January, the wind blows pretty generally from the N. and N. W.

Stones, Ores, &c.

There are few rocks that appear above the surface of the earth, and loose stones are rarely found, either on the surface, or in any of the varieties of earth, at any depth.

In the creek there is a great deal of hard, brittle slate. The rocks which cause the water-falls are composed of this species. No slate has yet been discovered in the place fit for covering the roofs of houses.

In the crevices of this slate are found great quantities of rock crystal, chiefly of that kind which, by mineralogists, is called *crystallum pellucidum*, and *crystallum flavum*, of the sixth genus of silicious compound earths. The pieces are very irregular in shape, though all of them have one or more sharp corners. I have procured some pieces, nearly a solid inch in bulk, clear as translucent glass, and remarkable for a fine polish. It scratches the surface of highly tempered steel, and cuts glass like a diamond. It consists of a very pure kind of silicious earth.\*

About seven miles from Kinderhook, on the left side of the road leading to Chatham, a copper mine has lately been discovered. The mine is on a rising ground. Two veins appear which incline downwards into the earth, at an angle of 45 deg. It is not opened more than twenty feet. The stone which forms the matrix of the ore is the common slate or schistus, of a mixed colour, blue and brown. The ore is of a greenish colour.

Two miles from the town of Kinderhook, a little distance from the road to Claverack, there is a bed of iron ore, which has been wrought. It is situated in the midst of a low marshy piece of soil. The ore forms a considerable part of the substance with which it is combined. It is called by the natives of the place *Bog Ore*. It is of a tolerable good quality, and has been manufactured into the cast iron, forged iron, and steel, which are in common use.

The great quantity of *iron* discovered in so many parts of this country is a proof, that it is formed from vegetable substances by some process of nature. It has been observed by Mr. Smith, on the formation of *iron*, that countries which have large quantities of decayed vegetables are in general furnished with *iron* and chalybeate springs.

The place abounds in argillaceous substances. The common clay in many places is mixed with about half its weight

\* Some specimens have been found in the form of a hexahedral prism, terminated by pyramids of an equal number of sides.



of silicious earth, and when baked, makes excellent bricks and pottery.

In no place in or near Kinderhook, has there been found any instrument, substance, or vestige of antiquity, which might lead us to suppose that this part of the country was ever inhabited by any race of people acquainted with the mechanical arts. Nothing has been discovered except arrow-points, formed out of hard flinty stones, which were used by the Indians, and a round stone or pestle, of three inches in circumference, and sixteen inches in length, with which they bruised their corn or maize, for food, in the cavity of the trunk of a tree formed so by burning it with fuel.

### ARTICLE III.

*An ACCOUNT of FEBRILE DISEASES, as they appeared in Portland and its Vicinity, in August and September, 1801.*  
By JEREMIAH BARKER, M. D.

THE weather during the month of August was, for the most part, cool and rainy. The fruits of the earth were luxuriant, and free from blasts or mildews.

In September the weather was dry and sultry, very little rain falling during the month.

In these months a considerable number of cases of fever, or rather *poisoning*, occurred in Portland and some of its neighbouring towns, though chiefly in the latter.

Almost every case which I attended or was informed of, could be traced either to unclean vessels and cloathing, or to stagnant ponds of water.

The first cases which I attended, wearing any formidable aspect, occurred in the latter part of August.

A merchant in Portland was attacked in the morning of the 24th with a nauseated stomach and chillness, succeeded with a flushed countenance, pain in his head and back, anxiety of the præcordia, and thirst.

He then took an ounce of Ipecac. wine, which operated three times. In the afternoon, however, the pain in his head increased, with a throbbing of the temporal arteries, and his pulse was full and quick.

At two o'clock I was requested to visit him, when twelve ounces of blood were drawn, and his stomach was cleansed with an alkaline emetic, viz. tart. emet. three grains, sal. ab-

synth. twenty, and it was worked off with warm water, containing a like quantity of the alkaline salt in each draught. He vomited six times, and his symptoms were considerably alleviated. In the evening an oily and alkaline cathartic was given, viz. ol. ricini an ounce, sal. absynth. thirty grains, which operated three times. After this thirty grains of sal. absynth. were given, in a mucilaginous vehicle, once in two hours, as also occasional draughts of lime-water.

Quick-lime was deposited in his bed-chamber, and cool air was freely admitted.

Cloths wetted with cold water were frequently applied to his face and temples, and his bowels were kept soluble with castor oil.

Upon this plan his complaints gradually abated, and wholly subsided on the sixth day. Tonic bitters were then given, and he soon recovered.

His clerk was attacked on the same day in a very similar manner, with the additional symptom of a red suffusion of the eyes. A very similar mode of treatment was pursued, excepting bleeding, as his pulse was not full, and the disease was subdued in about the same time. His recovery was equally favourable.

The next day a son of the merchant, aged twelve years, was seized with the disease, which was attended with stupor and low delirium, so that very little medicine could be administered. In the progress of the disease he vomited dark green matter, and his stools were black. He died on the sixth day.

Two of the merchant's labourers were also attacked about the same time, with the usual symptoms of fever; but from a suspicion that their complaints proceeded from eating fruit and wetting their feet. medical aid was not employed until the fourth day, when one was seized with convulsions and his skin was beset with petechiæ. The other voided bloody stools. They both died on the fifth day.

These cases bearing so near a resemblance to the epidemic fever, as it had appeared in Boston in 1798, and in other parts of the United States; and as it had been very healthy in Portland previously to their attack, it became a matter of inquiring, by the Select Men, from what source this alarming disease might originate.

It was found that on the 19th of August the ship Ocean had arrived at Portland from the Havannah, though last from New-York, where she had performed quarantine twenty days; having lost several of her crew with the yellow fever, as it

was called, and left some sick in the hospital on Staten Island.

These events induced the Select Men and the attending physicians, to suppose that there was some infection in the ship, which the merchant, his clerk and son had been exposed to, as they went on board four days previous to their seizure, and as the two men who died, had worked in the ship a few days before they sickened.

This suspicion was corroborated by finding upon inquiry, that the ship had brought a considerable quantity of fruit, particularly pine-apples, from the West-Indies, which rotted on her passage; and that, during her quarantine, she had not been wholly unloaded, a part of her cargo being brought to Portland in the hold, which had not been removed; and further, that, although orders had been given by the health-officer at New-York, that she should be wholly cleansed, she had been only slightly white-washed between decks, and a few pails of water were thrown into the hold and pumped out.\*

The following occurrences seemed still farther to confirm the suspicion that the ship contained morbid nastiness.

Two young men, from a remote and healthy part of the country, went on board soon after her arrival at Portland, and assisted in removing sundry articles from the ship's hold. Four days after, they were both attacked with a malignant fever, in a very formidable manner. The disease, however, was subdued in one week, by a liberal use of alkalines and oils, and they both recovered.

The master of a packet, who took goods out of the ship, and carried them to Boston, was seized with a malignant fever on his arrival at that town, and died. He voided bloody stools. One of his men sickened also at the same time, and died. His skin was of a deep yellow colour.

These events so alarmed the health-officer in Boston, that the packet was ordered to perform quarantine at hospital-island, twenty-five days!

It is worthy of remark, that no person contracted the disease from any of these patients, either in Portland or in Boston, although their attendants were numerous and assiduous.

Amidst this perplexed state of people's minds, a newspaper arrived at the post-office in Portland from Philadelphia, con-

\* The mate of the ship informed me that after he had white-washed the ceiling, the coat of lime, in several places, acquired a green colour. Was not this owing to a union of the septic acid with the calcareous alkali? or was the green hue of the *anatic* acid the cause?



taining Dr. Mitchill's letter to Dr. Bayley on quarantines; the proper mode of cleansing foul ships, &c. (See Med. Repos. vol. v. p. 243). This letter was attentively perused by the Select Men, as well as others, and republished in Portland.

Agreeably to the directions contained in this very important and interesting letter, the ship was removed from the wharf, unloaded, and so effectually alkalized, cleansed, and ventilated, that no further mischief arose from that source.

The owners of the packet readily obtained her release from quarantine, so that she might be alkalized and cleansed, lest by longer detention she should become still more infectious; and we feel a firm persuasion that if "*the method of house-cleaning should be applied to ship-cleaning*," according to Dr. Mitchill's ideas, quarantines, as they have been conducted, might well be dispensed with; by which commerce would be relieved of great expense, delay and vexation. Besides, the crews of ships, as well as the community at large, would thereby be in much less danger of being annoyed by the destructive effects of poisonous air, engendered in vessels from filth and putrefying substances, which, by the fostering hand of quarantine, will be continually increasing in its noxious power.

Notwithstanding our constant intercourse with the West-Indies, and the frequent occurrence of malignant fevers among us, which are sometimes attended with a yellow skin, there is not a *contagionist*, to my knowledge, in the District of Maine. Neither have quarantines ever been ordered in any part of the district; for these fevers have been much more prevalent in our country towns than in the sea-ports.

It is true that seamen sometimes arrive from the West-Indies, as well as other parts, labouring under malignant fevers; but we are no more apprehensive of contracting the disease from them, than we are from those who sicken with fevers in our country towns; for, in either case, there is such a similarity of symptoms, that we have no idea of a diversity of cause; and this cause is believed to be the poisonous efflu-  
vium of substances undergoing putrid fermentation; and, although these fevers are often communicated to attendants and visitors, when the diseased are crowded together in small, filthy, and unventilated apartments, yet I have never known or heard of any person's contracting the disease when the bedrooms have been large, and due attention has been paid to washing, alkalization, and ventilation. (See Med. Repos. vol. v. p. 194).

Quarantine, then, literally interpreted, would seem rather to promote than retard the propagation of these distempers. But if it should be so conducted as to become a system of cleanliness, one very important purpose would be accomplished towards exterminating malignant and pestilential distempers.

Then quarantine laws would, unquestionably, be rendered "instruments of the most humane and salubrious reforms in the economy of vessels, as well as in the police of cities." Then legislation would be established upon the principles of science; and then the delusive notion of imported contagion would vanish like a morning dew before the solar rays.

About the last of August a malignant fever appeared in an elevated and healthy part of the country, twelve miles from Portland. Six persons were attacked with this disease in one family; but they all happily recovered, as their physician has since informed me, upon the alkaline plan of cure.

These patients were sick in a small unplastered house, which contained foul and noxious air; so that several of their attendants sickened with the disease.

Two of their watchers, belonging to one family, were seized with the distemper; but fearless of danger, a physician was not called until the sixth day, when one was attacked with a black vomiting, and the other voided bloody and very foetid stools. The latter died on the seventh day, but the former recovered; and alkalines, in this case, appeared decidedly to be the curative means.

Inquiry being made into the probable origin of this fever, it was found that a few days before the first mentioned family sickened, a seaman had brought into the house his sea-clothes and bedding in a very unclean state, having just arrived from the West-Indies. In these clothes, and not in the Indies, had the venom been engendered.

In September malignant fevers occurred in different parts of the country, near stagnant ponds of water.

I was informed of one patient, thus situated, whose skin was of a deep yellow colour, and the intestinal discharges were black. Livid spots appeared upon the skin before death, which happened on the twelfth day.

Medical advice was not requested in this case, though domestic means were used, such as bilious pills and sweating teas.

I attended a considerable number of patients who resided near these stagnant ponds, which were almost dried up, exposing to view vegetable and animal substances, in a putrefying state, and emitting a very offensive smell.

These patients were invariably affected with nausea or vomiting, anxiety of the præcordia and chillness; to which succeeded pains in the head and back, quick and sometimes full pulse, thirst, and a furred tongue. In some few the skin was yellow, in others purple spots appeared.

In every case, however, which came to my knowledge, where alkalines and oils were duly employed, the disease was removed in one week, and no ardent symptoms of putrescency took place, nor any troublesome local affection.

Indeed, when alkaline emetics and oily and alkaline cathartics were employed upon the onset of the disease, the poisonous cause was often completely eradicated; so that no further means were required.

Such speedy and radical cures, I, and several of my brethren, have had frequent opportunities of witnessing; and when we consider the disease as "*the stomach-form of pestilence, produced by a poison primarily acting upon that organ,*" according to Dr. Miller's important ideas, we conceive that the happy effects of these remedies may as naturally be expected as in other cases of poisoning.

But when the stomach and intestines were not thus alkalized and cleansed, however liberally calomel was given, for it was used in some cases, the poisonous cause appeared soon to ravage the whole system, producing great disturbance and commotion in the heart and blood-vessels. Besides, in some cases, glandular swellings and painful boils took place upon different parts of the body. In others, the legs swelled, inflamed, and suppurated, producing what are vulgarly called *fever sores*.

Such accidents, in my view, seem to be more satisfactorily accounted for, from the stimulation of poison, accumulated in the particularly affected parts, than from the want of animal irritability or of oxygen, according to some; for it seems very difficult to conceive how a negative power can be productive of such positive effects.

In the three succeeding months the croup prevailed in several towns, and proved mortal in many instances.

Fortunately, in consequence of perusing Dr. Archer's account of the use of seneka in this disease (*Med. Repos. vol. ii.*), I had procured some of it from Maryland, as it could not be found in this part of the country.

This article I made use of, in the disease, agreeably to the Doctor's mode of exhibition, and it succeeded to admiration.

It actually emancipated the strangling infant in several instances, where the case appeared to be hopeless, by causing a



viscid and membranous substance to be discharged from the trachea.

The use of seneka, in the croup, has also been attended with equal success in the hands of some others among us.

For a knowledge of this article, as a remedy in this disease, we consider ourselves as indebted to Dr. Archer; and we hope that this discerning and judicious physician will favour us with further investigations relative to formidable diseases.

#### ARTICLE IV.

REMARKS on Mr. CRUIKSHANK'S EXPERIMENTS upon FINERY CINDER and CHARCOAL. By Dr. PRIESTLEY.

*To the Editors of the Medical Repository.*

GENTLEMEN,

MR. CRUIKSHANK having added a supplement to the account of his experiments on the air from finery cinder and charcoal, in answer to my objections to the new theory from the properties of that kind of air, I have given more particular attention to it, and wish to add the following observations to those which I have already sent to you on the subject.

When I first procured this kind of air I was far from imagining that I had discovered any *new species* of air, essentially different from any other, so as to be entitled to a new appellation, but only another variety in the heavy inflammable air, which is known to be exceedingly various in different processes, and even in the different stages in the same process; all however agreeing in this, that when all fixed air is carefully washed out of them, more is found on the decomposition of them when they are fixed together with dephlogisticated air. And in this essential property the air from finery cinder and charcoal agrees with them all, differing only in the proportion of the fixed air procured in this manner. This, however, I now find must be called *the gaseous oxyd of carbon*, while the others are called *hydrocarbonates*; that being said to consist of two parts of oxygen to one of carbon, and the others to be a solution of carbon in hydrogen or inflammable air.

It cannot, however, be denied, that this gaseous oxyd of carbon is inflammable, as well as the hydrocarbonates, in the composition of which a portion of hydrogen, one of the com-

ponent parts of water, is a necessary ingredient. This air, therefore, from finery cinder and charcoal, though called an *oxyd*, must be essentially different from all the other oxyds, none of which are combustible, being substances already saturated with oxygen. Thus iron is a combustible substance, ready to unite with oxygen when presented to it in a proper temperature; but when it is saturated with oxygen, and therefore called an *oxyd of iron*, it is no longer combustible. It must, therefore, as it appears to me, be an absolute abandonment of one of the most fundamental principles of the new theory, to call this air, from finery cinder and charcoal, an *oxyd*. If substances be *combustible* in proportion to their affinity to oxygen, and their consequent readiness to unite with it, this air, which is inflammable, must be of this class, and therefore the very reverse of the oxyds, which are saturated with oxygen, and incapable of receiving more.

If this kind of air was a real oxyd, it would appear to be so in the decomposition of it; when, to make the result unexceptionable, the oxygen it contained would either take the form of dephlogisticated air, or become a component part of some other substance into which oxygen is acknowledged to enter. But this has not been done. When it is decomposed by being fired together with dephlogisticated air, the fixed air that is then formed comes, I have no doubt, from the oxygen in the dephlogisticated air and the phlogiston in this species of inflammable air; the same being the result, though not quite in the same degree, of firing the heavy inflammable air from charcoal and water, the vapour of oil, &c. &c. into which it is not pretended that any oxygen enters.

Mr. Cruikshank's observation of the union of the oxygen in the dephlogisticated marine acid air with inflammable air in common temperature of the atmosphere, is extremely curious; but I do not see that any thing more can be inferred from it, than from the more rapid union of the same principles when inflammable and dephlogisticated air are fired together.

Mr. Cruikshank says, p. 201, that "the oxygen in the finery cinder uniting with the carbone in the charcoal, forms fixed air, and that the metal being in the same process revived, decomposes this fixed air, when it becomes again to a certain degree oxygenated." But why should not the finery cinder retain a part of its oxygen rather than first part with it, and then take it again? Besides, it is not true that after this process the iron is in any degree oxygenated, for it is completely revived, becoming perfect iron; and that any fixed air is either

formed or decomposed in this process, is altogether conjectural, and for the reasons that I have given cannot be admitted. For though it might be possible for oxygen in the finery cinder (supposing it to contain that principle) to be extracted from it by its affinity with carbone in the charcoal, and that nothing should enter in its place, the iron thus revived could not decompose the fixed air that would be formed by their union.

I am, Gentlemen,

Yours, &c.

J. PRIESTLEY.

*Northumberland, April 12, 1802.*

#### ARTICLE V.

*On the MEANS of lessening the PAINS and DANGER of CHILD-BEARING, and of preventing its consequent Diseases; in a Letter to Dr. EDWARD MILLER, by BENJAMIN RUSH, M. D. Professor of Medicine in the University of Pennsylvania.*

DEAR SIR,

IT has generally been supposed, that a necessary and unchangeable connection exists between pain and child-bearing. Such a connection, it is true, was established between them, as part of the curse inflicted upon woman after the loss of her primeval innocence. A similar connection was established between labour and the sweat of the brow in man; and yet thousands of our fellow men live without labour, in the enjoyment of all the comforts of life. Even the curse which was inflicted upon the earth has been in part repealed, by the spontaneous or artificial fruitfulness which has succeeded to briars and thorns in many countries. The mitigation of the pains connected with child-bearing has been effected in Turkey, by the use of sweet oil (which acts only as a purge) during the last months of pregnancy. A similar alleviation of those pains has been produced by climate, in a part of Africa, in the Brazils, in Calabria, in Sicily, and in several of the West-India islands. A scanty diet has so far lessened them in the Indian women of our country, that they are able to work a few hours after their delivery, which is sometimes effected without the aid of a human creature. Heaven, in these instances, has kindly intimated to us, that the pains of child-



bearing are not entailed upon the female sex by an immutable law. In our attempts, therefore, to improve and extend the means of lessening them, we do but develope the kind and benevolent disposition of the Creator of the world to the human race.

To induce a belief in the efficacy of certain remedies which are calculated to lessen, and, perhaps, finally to destroy, the pains of child-bearing at all times, and in all states of society, it will be necessary to premise the following propositions:

1. Previously to child-bearing, the female system is generally plethoric, and unduly excitable, from the ratio between exercise and the appetite being destroyed by an excess of the latter during pregnancy, and from the influence of the distended state of the uterus upon the whole system.

2. Child-bearing is a disease. The form of this disease is a spasm of a clonic nature. It does not militate against the truth of this proposition, that the morbid affection of the womb is not attended with inflammation; for we now know that disease does not consist in inflammation, that it is one of its effects only, and that the highest grade of disease often exists without inflammation. The symptoms of this parturient disease sometimes appear in chills, preternatural heat, thirst, a quick, frequent, full and tense pulse, pains in the head and other parts of the body.

3. The operations of nature in this disease, as in most others, are excessive, deficient, or not properly directed to accomplish her purposes. Their *excess* appears occasionally in great pains in the bowels, in hæmorrhages from the uterus, in convulsions of the whole nervous system, in the total absence of contraction in the uterus from the suffocation of its morbid excitement, in the wrong position of the fœtus in utero, and in the protraction of exquisite and fruitless pains far beyond the time necessary to exclude the fœtus. The operations of nature in child-bearing, I believe, are not often deficient in force. Women who have been debilitated by previous diseases, or by accidental evacuations of any kind, have generally very easy and natural labours.

As a natural inference from the above propositions, I go on to remark, that the remedies for difficult and painful parturition should be the same as for all other convulsive and spasmodic diseases, taking care to vary them according to the force of the disease and the state of the system. As the difficulty and extreme pain of child-bearing arise chiefly from an excess of natural force, or from an improper direction of it,

I shall first mention the remedies for lessening its pain and shortening its duration.

The first of these remedies is blood-letting. I suggested the use of this remedy, with most of the above reasons in its favour, in my Lectures, in the year 1791. On the 11th of January, 1795, a man came into the Pennsylvania Hospital, whose shoulder-bone had been luxated for two months. All the usual methods of reducing it had been tried to no purpose. Dr. Physick, to whose care he was committed, began his preparations to relieve him, by drawing blood from his arm until he fainted. While he lay in this insensible state, the Doctor reduced the bone with but little force, and nearly in the twinkling of an eye. This easy and happy cure increased my confidence in the lancet in parturition. It was confirmed still more by recollecting its controuling influence over the morbid excitement of the uterus, in preventing abortions in the yellow fever of 1793, and by reflecting on the instant relief which it affords in colics, convulsions, and all other violent diseases, which affect, at the same time, the muscular and arterial systems. But I am happy in being able to add, that my opinion of the efficacy of blood-letting in abating the pains and danger of child-bearing, no longer rests upon reasoning and analogy. Dr. Dewees, of this city, has adopted it with the happiest effects. Dr. Brown, formerly a pupil of Dr. Physick, has lately used it in his practice in Chester county, in our State, to an extent which has added greatly to the benefits derived from it. He seldom draws less than thirty ounces of blood in the beginning of a labour. The consequences of this copious loss of blood, in the diminution of pain, and accelerating the exclusion of the foetus, have been highly grateful to his patients, and pleasing to their friends. Considering the predisposing causes of plethora and excitability which have been mentioned, I am disposed to believe a much larger quantity of blood than thirty ounces might be drawn in some cases, and at certain times, with advantage. These times are in the winter and spring months, and during the prevalence of inflammatory and malignant epidemics; for, in the latter period, Hippocrates long ago observed labours to be more difficult than at any other time.\* It is from the influence of the same state of atmosphere which produces these more difficult labours, that abortions are so common during the prevalence of the plague in all countries.†

\* Book i. Const. 3d.

† Diemerbroeck de Peste.

I am aware that this remedy is not a new one to a certain degree; but I believe it has never yet been advised nor used in the copious manner, nor regulated by the morbid phenomena of child-bearing, which have been mentioned.

2. In addition to the loss of blood, suited in quantity to the symptoms of the parturient disease, the bowels should be plentifully opened by means of glysters, and the diet and drinks should contain as little stimulus and nourishment as possible.

3. Perhaps an advantage would arise from advising a low diet to pregnant women for ten days or two weeks before they are confined, also from the use of lenient purges once or twice a week, agreeably to the Turkish practice, during the three last months of their pregnancy. The good effects of this regimen in lessening the violence of the small-pox and yellow fever, encourage us to expect similar benefits from it in the violent disease of parturition.

I have hitherto advised the use of blood-letting, and other depleting remedies, only as the means of lessening the pains and danger of child-bearing; but their advantages would probably extend much further by preventing the after-pains—hæmorrhages—obstructed lochia—retention of the placenta—prolapsus uteri—inflamed breasts—swelled legs—colics—madness and fevers which so often follow delivery. Even the foetus would probably be benefited by the use of the above remedies, by suffering less from pressure and bruises, in a tedious and painful passage into the world.

You will perceive, from what has been advanced, that the principal design of this communication is to suggest that a morbid action may be converted into a natural one, and thereby placed upon a footing with other actions of the body which are painful or tedious only from disease. The lower limbs and the arms, which suffer exquisitely in a rheumatism, are overstretched, without pain, in running, and lifting heavy weights. The blood-vessels, likewise, when excited into morbid action in a fever, communicate pain to the head and other parts of the body; but the same vessels, when increased in their force and dimensions by the equable and healthy action induced by violent exercise, are never known to produce pain, and subside by rest, without danger, or injury to any part of the system.

The cases of difficult and painful delivery, from a state of the system below that to which depleting remedies are calculated to reduce it, I have hinted, rarely occur. Most of the



labours I have met with, or heard of, in the last stage of chronic diseases, have been short, and comparatively easy.

Where there is reason to believe the contractions in the uterus will be too weak to expel the foetus, a cordial diet should be advised previously to the expected time of confinement; and where the absence of throes, and the slow progress of delivery, indicate a deficiency of muscular irritability in the fibres of the uterus, opium should be given in proportion to the exigences of the system. I think I have seen the happiest effects from that excellent medicine, in such cases, in destroying useless pains, and shortening the duration of labour. How far a medicine so powerful (if such can be found) as wholly to suspend the sensibility of the nerves, without impairing their irritability, might succeed in destroying pain altogether, I know not; but the following fact shows that it has been destroyed by a disease which produced that effect upon the nerves. A lady, who had been for several years subject to epilepsy, was delivered of a child in one of her fits. Immediately afterwards she fell asleep. Her child was dressed, and laid by her side. In the morning, as soon as she awoke, she saw this child, and asked with surprise whose it was. Upon being told it was hers, she declared that she had no recollection of having felt the least pain in bringing it into the world. This information was communicated to me by the husband of the lady, a few hours after her delivery, for I was then attending her for another indisposition. In this instance we see what Dr. Darwin calls a sensitive and irritative disease, converted into a disease wholly irritative.

From, dear Sir,

Your sincere friend,

BENJAMIN RUSH.

*Philadelphia, May 12, 1802.*

*P. S.* In looking over some old letters upon medical subjects, I met with a communication from one of my former pupils, Dr. Bullus, which forcibly illustrates the principles and practice contained in the foregoing letter upon the parturient disease. In the month of July, 1797, the Doctor was called upon at Reading, in Pennsylvania, to attend a woman, about the last month of her pregnancy, in a malignant fever. By the use of copious bleeding and a salivation she recovered. But her labour soon afterwards came on, "and (says the Doctor), as it continued rather long, I bled her twice. Immediately after binding up her arm, I delivered her of two

fine boys, without any difficulty to myself and with scarcely any pain to my poor patient. She has since told me that she had never experienced so little pain in any of her former labours, which have been fourteen in number, and that if she were to undergo twenty more she would always be bled in them." In a subsequent letter, dated July 30th of the same year, the Doctor says his patient, whose name is Ann Harkner, had consented to the publication of her case, and that, if necessary, she would subscribe it with her name.

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## ARTICLE VI.

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*An INQUIRY into the UTILITY of occasional BLOOD-LET-  
TING in the PREGNANT STATE of DISEASE: Communi-  
cated in a Letter from Dr. JOHN VAUGHAN, of Wilming-  
ton (Delaware), to Dr. MILLER.*

THE sexual complaints of females, and especially those incidental to pregnancy, are so distressing and hazardous in their nature, as to demand the special attention of the faculty. It is, therefore, of the utmost importance that a uniformity of practice should be established in the treatment of those affections which harass the feeble females of civilized countries. But as long as preconceived opinions and popular prejudices are suffered to controul our practice, so long we are liable to error. There is, perhaps, no subject on which physicians are more divided in opinion, than on the effects of occasional blood-letting in the pregnant state; and from a desire of contributing to the determination of this controverted question, I shall preface the present inquiry with a consideration of the nature of pregnancy, and prosecute the subject in the belief of its being a diseased state.

Most writers on female complaints guard us against intrusion on the lines of demarkation drawn by nature in the establishment of mankind. They term child-bearing, with all its present incumbrances, a mere natural condition, neither requiring nor admitting of the operation of blood-letting, except in extraordinary cases of disease. But we should not confound the simple laws of nature with the indirect consequences of human degeneracy. It is not presumable that the process of procreation was originally burthened with sorrow and pain; but they are contingences to be found in the archives of hu-

man misery, enrolled in the list of consequences of the transgression of our first parents. In the commonly accepted translation of the Pentateuch, the penalty incurred by the disobedience of the mother of mankind is thus recorded in the personified language of divine justice: "I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children:" and in the Greek version, or Septuagint, the word *sorrow* is rendered λυπας, which signifies *pains* or *sickness*, and the word *conception*, στεναγμός, which signifies *groans*. Hence child-bearing is literally and proverbially designated by the common title of *groaning*. But, I presume, we may very safely rest the question of pregnancy being a diseased state, on what may be termed natural principles; and we shall pursue the inquiry on the ground of experience and observation, without predilection for, or prejudice against existing authorities. The diversified conditions of women shall be duly considered; and the influence of varied modes of living, in preventing or augmenting the complaints of pregnancy, impartially estimated.

The example of women in a simple state of life, who bring forth children with little comparative suffering, is frequently brought forward in support of the position that child-bearing is a *mere* natural condition. "The Brazilian women are extremely fruitful—have easy labours—retire to the woods, where they bring forth alone, and return after washing themselves and their child; the husbands lying in bed the first twenty-four hours, and being treated as if they had endured the pains."

"The Tapoyer women cut the navel string with a shell, and wash themselves and their children every morning and evening after delivery."

"The Californians had adopted that absurdity which is so much laughed at in the accounts of Brazil—that the women, after delivery, used immediately to go to some water and wash themselves and the child; and, in other particulars, to observe no manner of caution, going to the forest for wood and food, and performing every other service the husband wanted."

"The female negroes, on that part of the African continent called Guinea, or Negro-Land, are delivered with little or no labour: they have, therefore, no more occasion for midwives than the female Ourang-Outang, or any other wild animal."

The Indian women, in the interior parts of our own



country, are said "to have no midwives among them; their climate, or some peculiar happiness in their constitutions, rendering assistance at that time unnecessary. On these occasions they are confined but a few hours from their usual employments, which are commonly very laborious, as the men; who are remarkably indolent, leave to them every kind of drudgery."

The truth of these several statements is not denied; but it must, at the same time, be admitted, that the numerous forms of disease to which mankind are subject, are, in a great degree, owing to the habits of dissipation and effeminacy, and the complaints of pregnancy much aggravated by refined modes and manners. Would it not be equally just to term a female Hottentot an accomplished lady, as to consider a lady of fashion of the present day a mere child of nature?

The effects of habits of effeminacy and dissipation in multiplying the forms of disease, were long since established, and beautifully described in the following emphatic lines, by the poet DRYDEN:

"Our ancient fathers hardly earn'd their food;  
"Toil strung their nerves and purify'd their blood;  
"But we their sons, a pamper'd race of men,  
"Are dwindled down to three-score years and ten."

The influence of modern manners is more immediately and specially felt by the female sex. Men, in all countries, and under all circumstances, are more or less prompted to exercise by business or pleasure; but the females of civilized nations are generally confined to domestic affairs, the laborious parts of which are performed by servants. Their amusements or pleasurable employments are generally irregular and excessive, much beyond that degree of exercise which promotes a due performance of the animal functions, and gives permanent vigour to the constitution: and an observance of the immediate and progressive symptoms of impregnation, in my opinion, affords demonstrative evidence of pregnancy being a diseased state. The immediate symptoms are, lassitude, depression of spirits, impaired appetite, and a variety of sensations, so equivocal in their nature, that they frequently embarrass inexperienced women, and are generally so imperfectly described as to perplex the physician to distinguish them from the mere effects of suppressed menstruation. The latter is confessedly a *diseased state*. These preliminary feelings occupy the first ten weeks, which may be termed the *forming stage of pregnancy*.

34 *On the Utility of Blood-Letting in Pregnancy.*

These affections are followed by sickness and vomiting, a capricious appetite, distressing sensations of heat in the stomach, frequent eructations, faintings, hysteric fits; fretfulness of disposition, disturbed sleep with unpleasant dreams, an uneasiness of the breasts, and a change of the position of the uterus. From the tenth to the twentieth week the complaints depending on the sympathetic connection of the uterus with the stomach and nervous system are exceedingly distressing to delicate women; but when the uterus rises out of the pelvis, and assumes its proper position in the belly, we may consider the second, or *irritable stage of pregnancy*, concluded.

When the uterus is so far enlarged as to be confined above the pelvis, it increases in a rapid progression, and produces an additional order of complaints. The pressure of the gravid uterus on the urinary organs, intestines, and the whole of the abdominal viscera, occasions difficulty, suppression, or incontinence of urine—costiveness, and colic symptoms—swellings of the thighs and legs—cough, and impeded respiration—flushings of the face, giddiness, head-ache, and frequently apoplectic symptoms—and a sense of general oppression in the abdomen. The capacity of the thorax is lessened by the pressure of the uterus against the diaphragm, giving rise to the pulmonic symptoms already mentioned.

During the latter months the pulse is either labouring and depressed, or full, and more or less tense: I shall, therefore, denominate the last described period the *plethoric stage of pregnancy*.

This division of pregnancy into different morbid stages is predicated on the progressive nature of impregnation, and the successive orders of complaints incident to that state. Instead of enumerating the morbid symptoms of pregnancy under the generic character of “the diseases of pregnancy,” I have chosen the present arrangement as being more simple and perspicuous, and, I flatter myself it will be acknowledged, more consistent with reality.

It is, perhaps, difficult to define the morbid nature of pregnancy so as to found our discussion of the utility of blood-letting on given principles, and preclude irrelative argument: I shall, however, consider pregnancy as a diseased state, constituted by increased excitement in the uterus, from an accumulation of animal life, and the mechanical stimulus of the fœtus. That pregnancy is a state of extra-uterine excitement, is self-evident to every mother, and manifested to the physi-

cian by the correspondent affections of those parts connected with the uterus by sympathetic association and situation; and the relief afforded to other organs, previously diseased, evinces a concentration of excitement in the gravid uterus; while the tenacity of pregnant animals for life, and the surviving existence of the foetus in utero after the death of the mother, conspire to prove the extra-vitality of impregnation; and the mechanical effects of child-bearing are obvious to the senses.

Upon this view of the nature and phenomena of the pregnant state, which, from considerable experience and observation, I believe to be correct, I consider blood-letting useful,

1. In the irritable stage of pregnancy, in lessening the tendency to irregular action, and the morbid association of the stomach, brain, and nervous system, from the accumulated sympathies of the uterus; obviating or relieving sickness and vomiting, faintness, hysteria, and the whole catalogue of distressing sensations usually stiled nervous complaints.

2. In preventing and restraining uterine hæmorrhage and abortion. The frequent occurrence of hæmorrhages, and the other harbingers of miscarriage, at or near the third month of gestation, show the existence of inordinate excitement in the uterine vessels, especially in delicate habits, unable to bear the slightest irregularities. The suppression of the catamenia before the embryo is so far evolved as to require ordinary nutrition, subjects some women to a continuance of this constitutional hæmorrhagy during the first three months; an event of the utmost hazard, and only to be obviated by monthly blood-letting at the arm. In a number of cases of women who suffered abortions from this cause, owing to inattention, or prejudice against blood-letting, I have found the loss of a few ounces of blood from the arm, on the approach of anxiety or lassitude, the usual precursors of the menses, give immediate relief, and arrest the approaching evil. And when hæmorrhagy has actually taken place, a counter-determination by the same mean, together with rest in a horizontal position, are the only effectual preventives of abortion.

3. In moderating the complaints of advanced pregnancy, by lessening the volume of circulating fluids, and counteracting the tendency to congestion of the lungs, brain, &c. and obviating cough and breathlessness, oppression at the præcordia, and convulsions.

4. In facilitating parturition. The effects of blood-letting, a short time previous to labour, in moderating the general oppression occasioned by the mechanical burthen of the foetus,



and equilibrating the circulation of the blood, demand the attention of the humane obstetrician. And in tedious and difficult labours, a few ounces of blood taken from the arm will often remove a rigidity of the os uteri—relieve cramps of the lower extremities—and happily abridge the parturient sufferings of weakly women, and especially those married late in life.

5. In preserving the constitution of women from the injuries attendant on abortion, and in moderating habitual complaints. It is not uncommon for the morbid states of childhood and puberty to be reproduced by the stimulus of pregnancy. I have seen recurrent palsy, epilepsy, and hæmorrhoids, banished by repeated blood-letting, and renewed vigour given to the constitution.

6. The puerperal state depends much on the previous state of a woman's system, and the delivery of the placenta; and judicious blood-letting will aid the former and facilitate the latter. In several cases of difficulty in removing the placenta, it appeared, on inquiry, that the woman had been troubled with a continual dull pain and sense of soreness at the place of attachment; and, on examining the secundines with attention, they evinced the existence of chronic inflammation. Careful blood-letting, in succeeding pregnancies of the same persons, have afforded them comparatively easy and speedy labours, without difficulty in removing the placenta.

There is little doubt but a plethoric disposition may change the texture of the decidua reflexa, and render it the medium of morbid adhesion. But, when the inflammation is prevented, and the circulation of the blood between the mother and child is free from interruption and oppression, the placenta discharges itself at the severed funis, collapses and falls off. If, however, the funis suffer material compression in a tedious labour, the placenta becomes engorged, the circulation of the chord destroyed, and some hours elapse before a separation takes place; though the child may not be injured beyond recovery. In such cases, an emollient clyster, rest and patience, will, sooner or later, accomplish the expulsion; care being had that a partial separation has not taken place, and an insidious effusion going on in the uterus.

7. Bleeding, from the considerations briefly taken of the pregnant, parturient, and puerperal states, evidently tends to promote the due nourishment and final welfare of the child.

The general utility of blood-letting in the pregnant state is supported by the relative circumstances—

1. Of pregnant women bearing the evacuation much better than in ordinary cases, and being less liable to faintness, and consequent direct debility.

2. "The distention induced upon the uterus directly, and indirectly upon the whole system, by the foetus, renders bleeding, in the inflammatory states of fever, more necessary than at other times."

3. Blood, drawn in the latter months of pregnancy, uniformly indicates oppressed or inordinate action.

4. The pulse, when labouring or depressed, rises upon blood-letting.

5. A suppression of the catamenia predisposes to inflammatory states of fever.

6. Bleeding is the most speedy and effectual remedy in difficult or partial menstruation.

7. The cessation of the menses induces "a morbid fulness and excitement in the blood-vessels."

8. Women are less susceptible of cold during pregnancy than at other times.

*(To be continued.)*

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## ARTICLE VII.

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HINTS *towards promoting the HEALTH and CLEANLINESS of the CITY of NEW-YORK, (applicable to all other Cities in America.)* By Mr. SABATIER.

AS a stranger in the city of New-York, I have been led to inquire into the causes and circumstances of the Yellow Fever, which has now become so frequent in its appearance, as to induce the belief that it is permanently fixed. This, certainly, is a very unhappy opinion, as it tends to prevent those exertions to remedy the evil which, possibly, might prove efficient.

It is also a matter of dispute whether, on the contrary, it is not annually introduced from foreign countries or other parts of the United States. Whatever the cause, the real truth is, that the city is not sufficiently cleansed, and that it therefore is not to be wondered at, *when once introduced*, the fever should, even without an annual importation, continue to make its appearance every year, during the hot months, and rage with

more or less violence, until again rendered inactive by the cold.

People also differ on the subject of the remedies. Some place most confidence on the rigid execution of quarantine, which, in New-York, in certain months, is enforced on vessels and their crews; but very little regard is paid to the examination of persons coming to the city by land. Others think that cleanliness is of most consequence, and two laws of the Corporation, the one "*for regulating the paving, and preventing obstructions,*" and the other "*for preventing nuisances,*" are generally considered as efficacious in this line as any additional rules can make them.

I beg leave, however, in return for many civilities received in this city and other parts of the State, to point out some further improvements which, if they do not completely eradicate the disorder, as I sincerely believe they will if zealously executed, must, no doubt, greatly alleviate it.

In treating the several subjects necessary to attain either of these objects, I shall seldom have occasion to touch on those regulations which are already pointed out by the laws, many of which are of sufficient importance to merit more attention in practice than they at present meet with; which omission is, I find, occasioned by the idea that, except in the unhealthy season, remissness may be indulged without hazard. But this opinion also is as erroneous as the former. A habit of cleanliness, like every other, is the more to be depended upon the more regularly it is practised; and ill-health, occasioned by uncleanness at any season, may, and assuredly does, lay a broad foundation for disease, in those months when sickness is most active. May not the time arrive, when, by clearing the lands in the back countries and other unknown causes, the winters may be so far ameliorated, that the cold will no longer produce the effect of impeding the disorder? We know that formerly the Tyber was annually frozen over, and we are certain that it never is the case at present.

In those countries where the plague is most known personal uncleanness is so excessive that the most fatal disorders arise from that circumstance alone. In some, the natives never change the clothes which they wear next to the skin; but in a great measure trust their health to frequent bathings. In others, though attentive to this particular, the inhabitants are indifferent to that which delicacy has ever considered as the most degrading to our nature. The people of the United States, in general, are not to be reproached with the first of



these causes, but such undoubtedly is the case among some of the poorer people, especially the emigrants. In the second, they are not, perhaps, so indifferent as they are in some countries which boast of greater refinement; but the heat during the months of July and August render every precaution more necessary in this climate than in those, where, though the cold is less intense in winter, the heat also in summer is less in extremes: such negligence in more moderate climates thereby proves an inferior evil in point of health, though by no means so in point of moral delicacy.

The great means of cleanliness, if properly applied, is WATER; and the most certain means of giving to water its natural effect, is, after the application, to get rid of it as soon as possible; and, through that medium, to convey away also those impurities, which otherwise, by floating in the air, would probably be inhaled by the lungs, and so enter into the system, and appear in a variety of shapes to baffle the skill of the physician. Impurities, no doubt, may be removed or rendered inactive by other methods, which become the more necessary where water cannot conveniently be brought to act alone. To this end, lime has been found the most effective, both used dry and mixed with water. The particles, which otherwise would cause disease, like arsenic when incorporated with lead, are rendered inactive when mixed with lime.

There probably is in no country a city where water can be procured and again conveyed away with more ease than in New-York. The point of land on which it is built, with a rapid river of salt water on each side, is in no instance very wide, and it has a ridge running through the middle, from which the descent is amply sufficient to drain all that is superfluous. Even the remoter parts of the city are so situated, that the one river or the other can be made to receive all the drains. No person will doubt this opinion, when it is understood that engineers have found, from experience, a descent of three inches in one mile sufficient to give activity to pure water; but a drain for foul water should never, if possible, be less than two feet in a mile, which is a trifle compared to what can be obtained from the Broadway.

I have divided the observations, herein submitted, into the following heads:

1. Common sewers.
2. Kennels in the streets.
3. Drains above ground from houses.
4. Drains below ground from houses.

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2. Kennels in the streets.
3. Drains above ground from houses.
4. Drains below ground from houses.

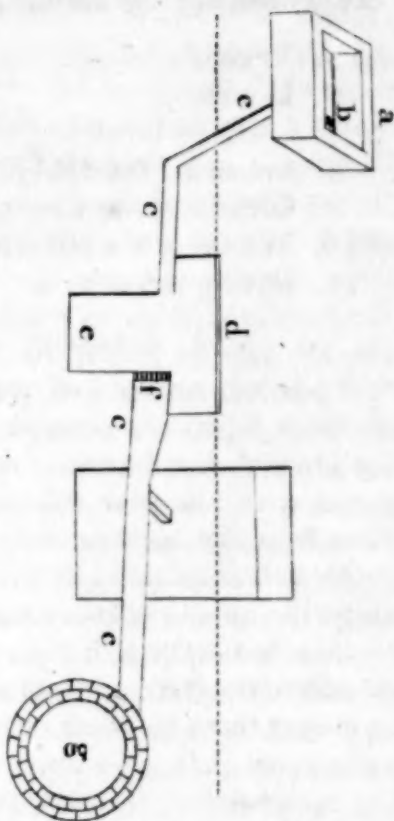


5. Vaults.
6. Docks.
7. Lodging houses.
8. Burying grounds.
9. Cleansing the streets.
10. Watering the streets.
11. Paving the streets.

#### 1. COMMON SEWERS.

Were it possible instantly to convey the whole filth of a city to a place from whence no danger could arise, there would be no use for sewers; but the various liquids used in houses are so impregnated with offensive substances, that it is proper to remove them from the open air as soon as possible. The practice therefore in well regulated cities is to have a common sewer to run through the middle of every street, and with these the drains from the houses and the kennels are communicated. The Romans are said to have made them so large that a cart and horses could be driven through them. In London the modern sewers are circular, and built of a double row of bricks, set on edge, checking each other. They are of a diameter to admit a person to walk in a stooping position. They are often, on account of the distance from whence they run, and the nature of the ground, sunk at the outlet to the depth of fifteen or twenty feet; but this would seldom be necessary in New-York. The bricks ought to be formed in a mould made for the purpose, that the bevel may suit the circumference. They should be of the most perfect manufacture, and the mortar formed of the best materials. The circular shape of a drain or sewer has two very powerful effects. It is stronger than any other; for, if well supported at the sides, it can never be over-loaded, and it is not liable to choak up, because the channel narrows and extends in proportion to the quantity of water running in it: if there is any sediment in the sewer, be there ever so little current, it must wear a channel in the middle of it, and of course, the sides of the mud will cave in and be carried off: but where it is built flat and broad, that cannot often happen, as nothing but a torrent can keep it free. The distance from the Broadway to either river is so short and steep, that, I will venture to say, a *circular drain* would never choak up. In the city of Philadelphia the streets are very flat, and are four times the length of those at New-York, having at present but one river to empty into; on this account the drains sometimes overflow the streets.

Fig. 1.



- a. The Sink.
- b. The grate to the Sink.
- c. The House drain.
- d. A passage from the surface of the yard to the Cess-pool, placed before the grate of the drain; made big enough to admit a person to go down to clear it out and repair the grating. This passage should be built of brick, and covered with a trap-door, laid flush with the pavement of the yard.
- e. The Cess-pool.
- f. The grate to the drain.
- g. The Common sewer.

Fig. 2.

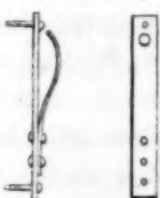
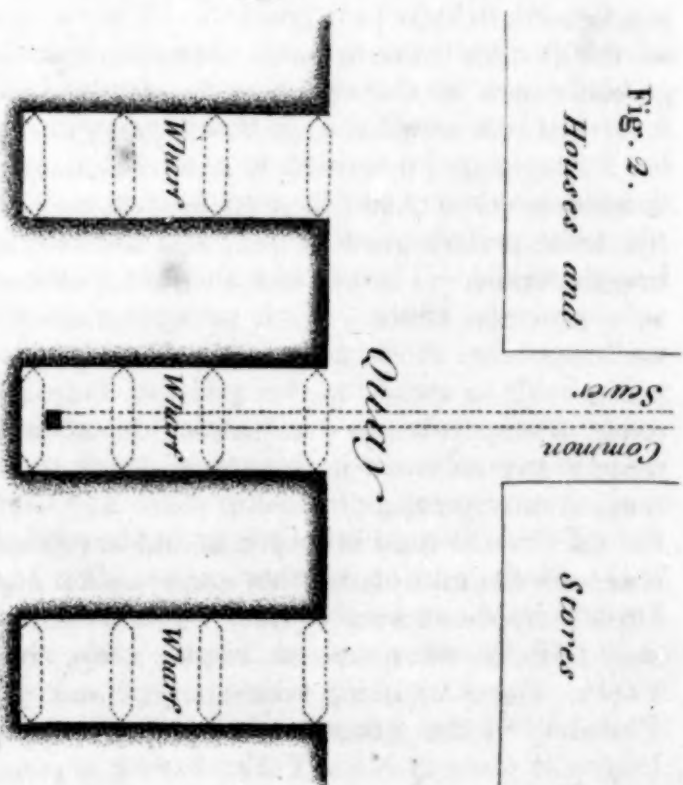


Fig. 3.

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2. KENNELS IN THE STREETS.

The kennels are those drains on each side the carriage way, next the foot pavement, which are above ground, and ought to serve no other purpose than to carry off the rain-water which falls on the pavement of the streets, and such other water as may be used for washing them. But as the water which runs in them must, of necessity; be often impregnated with offensive substances, there should be gratings at short distances to admit the water into the drains running at right angles into the sewers. The gratings should be neither too large nor too small—if the former, the substances passing through being too gross, will tend to choak the sewers; and if the latter, the water will be prevented in its passage, and thereby overflow the streets, unless removed by the neighbouring inhabitants, which is an attention not generally to be depended on. These kennels should never be made to cross a street; but where many ways meet, there ought to be as many gratings; for they must always be foul, and, besides, cause a disagreeable jolt to carriages.

3. DRAINS ABOVE GROUND FROM HOUSES.

The drains when above ground, ought only to convey the rain-water from the tops of the houses into the kennels; and even when applied to this purpose alone, they would be much better if conducted *under* the foot-pavement; for in this case the spouts would not annoy foot-passengers, by spattering on their feet. A narrow crevice of an inch over, to run the breadth of the pavement, may be left open to clear away any obstructions.

4. DRAINS BELOW GROUND FROM HOUSES:

It is on several accounts necessary that these should be well constructed; but principally because they will generally be sunk so deep that the expense of opening the ground will be considerable, and the inconvenience to the public very great, as they must of necessity be as numerous as the houses. They should communicate with the sink of the house at one end, and with the common sewer at the other. There should be an iron grating in an accessible situation to stop any gross matter from flowing into the body of the drain; and just in front of the grating there ought to be a cess-pool, of about eighteen inches square, and two feet deep, below the upper surface of the drain, to receive into it any heavy substances which may have escaped

from the sink; to which last there ought also to be a grating. With this drain there may be a communicating branch from the vault, to carry off the water; but it should be fixed three feet from the bottom, and care should be taken to empty the privy before the night soil can arrive at that height. See figure 1.

#### 5. VAULTS.

The vaults of privies ought to be constructed of the best materials; and the bricks, if bricks are made use of, should be sufficiently hard and well made to resist the passage of the soil as well at bottom as the sides; the walls should be covered with the best terras work, and by that means made perfectly tight. But a composition of boiled tar and charcoal, finely pulverized, will be found, for durability, superior to any other covering. The vaults, if there is room to extend them sideways, need not sink more than six feet below the surface of the ground. It is of importance to arch them completely over, except where the seats are placed, in order to confine the effluvia from the building. There should be two air funnels in opposite places to admit and let out the air. When vaults are emptied, the soil should be mixed up, and afterwards covered, with coal-ashes or lime, which will almost entirely prevent the effluvia. This should be done by persons who understand the business, who have covered carts, and other necessary conveniences provided, and are licensed for the purpose. The soil should be conveyed out of the city to a distant and retired spot. The detestable and injurious practice of throwing night-soil into the docks, and the use of tubs, unknown any where except in New-York, should be abolished under much more severe penalties than exist at present. See section 5.

It is a very false prejudice to suppose that the springs will be injured by sinking vaults. Every good bricklayer knows, or ought to know, how to make them secure; and, *if any difficulty should in this respect arise*, the master workmen in this branch of trade should be put under license, and be sworn to execute such works as may be thought worthy of legal regulation. It is not uncommon for the laws to dictate to a man how he shall build his house. Great evils require extraordinary remedies, and it must be recollected that we are devising means to rid the community of a distemper little less infectious than the plague. A vault, well built, will not become peculiarly offensive, even though, as in London, it is not emptied more than once in eight or ten years.

6. DOCKS.

There is nothing in the city of New-York so offensive as the docks, which emit effluvia sufficient, one would think, to cause sickness in every season of the year. The remedies here recommended, may be expensive at first; but if properly executed, I sincerely believe they will prove not only greatly efficacious but profitable, besides being highly ornamental. It will, at the same time, provide for the conveniency of shipping, and prevent the dangerous consequences of the ice, which, in winter, if the ships lay at the end of the wharves, would injure their bottoms. The docks, as they are at present constructed, impede the current as well as the ice, and all the dirt which is either thrown in, or otherwise lodged, remains in the ship until removed at a great expense by hand, and then occasions an excessive stench.

The docks should be extended to one even front from the Battery up the East and up the North rivers, according to the plan proposed by the corporation, with a face of stone, leaving a quay of sufficient width, in front of the stores, for the passage of carriages. This should be not only sufficient for the present commerce of the city, but provide for a future increase. The wharves, which may be built from the quays, should project into the rivers equally from one end to the other, and should be formed by arches, the piers of which should be on one line, and at the bottom and above the common tides have the form of a lozenge. By this means the tides will not be impeded; as would be the case if they presented a square front, but will have their full power, be it more or less, in carrying off the dirt; at the same time, the cakes of ice which run there will be but small, as they must necessarily, in a great degree, be broken and obstructed by the piers, and be thereby turned off into the stream beyond the wharves. The stones of which the quays and wharves are built should be very heavy, not less than a ton each, wherever the water is liable to reach; and every two adjoining stones should be clamped together, and the irons fixed in the stone with lead. If these piers are continued to be built of logs, the filth will still settle between them.—The next thing is to prevent, as much as possible, the filth from lodging in the slips. In order to this, the common sewers should be carried over the arches to the ends of the wharves, and thereby fall as far in the stream as possible. See figure 2.

Another very essential regulation is to forbid people on board vessels laying at the wharves, to throw any thing whatever,



except liquids, into the slips, but be obliged to reserve their dirt for the city carts, which should go round and ring a bell as a notice of their coming for the shipping, as they by law are enjoined to do for the houses.

#### 7. LODGING HOUSES.

Here, probably, is deposited the seat of the disorder.

For more than twenty years, the town of Manchester, in England, had been greatly afflicted with a contagious fever, which seemed to baffle the utmost skill of the faculty; at length, a few years ago, an inquiry was set on foot, and a report, made by Dr. Ferriar, on the subject, showed that it existed, almost solely, in those lodging houses where the poorest people resided; that many of the lodgings were in cellars, which had no ventilation, were seldom cleaned, and were very crowded: that it often happened, that people coming fresh out of the country, were at night put into beds from whence others who had died of the fever had been buried the same day. The remedies which were recommended were carried into execution, and proved efficacious. I shall here follow the same, with some additions, and have a sincere belief the like good consequences will ensue in New-York, if rigidly attended to; for I believe no doubt remains in the mind of every unprejudiced person, that the yellow fever is more likely to lie concealed in such places than in others.

The first thing to be done is to oblige every person letting lodgings to take out a license. It will be best to make the rule general, in order to avoid invidious distinctions.

The next is to appoint a visiting committee *for this especial purpose*, who shall report all delinquents of the regulations, and note such occasional observations as may occur. This requires only an extension of the 16th section of the present law,

This committee should see the following rules put in execution:

1. There should be but a certain limited number of beds in any room, and every bed should be allowed such a space as will tend to keep the air from becoming unwholesome by too quick a respiration.
2. The rooms should have their floors well washed and scrubbed with soap or ley once a week; the walls and cielings white-washed twice a year.
3. There should be no lodging rooms in cellars.
4. There should be some efficacious prevention of tubs in privies, by obliging every householder to have such a vault on

his premises as is deemed to be of the best construction. A matter of such essential consequence ought not to be left to the judgment or caprice of any individual. See section 16th.

5. The floors should be sound and tight, that if liquids are spilled, dirt and wet together may not be collected underneath, and occasion ill smells.

6. Every means of ventilation ought, at least, to be recommended, and, if necessary, should be enforced. When two rooms are contiguous, it is convenient to have a window between them, in order that a thorough draught may be had in hot weather; but it should be an object of police to promote the making of sashes to let down at top, as well as lift up at bottom, for all heated air has a tendency to rise, and is least pure at the top of the room. Ventilated at top, it is sure to be as pure at bottom as circumstances will admit; but although every person is sensible of this property in nature, how very few sashes, except in the dwellings of rich people, are so constructed, and this on account of the expense of the lines, pullies, weights, and carpenter's work; all which are unnecessary, for two springs to each sash (one on each side) if well made, will be found to be simple, cheap, equally useful, and much more neat, as they are placed completely out of sight. The stiffness of the spring should be proportioned to the weight of the sash. See figure 3.

#### 8. BURYING GROUNDS.

If properly attended to, the rules established for the burial of the dead in the 14th section of the law, will probably answer every object required; but should further precautions be at any time necessary, the adoption of the practice of burying in lime, very prevalent in some parts of Europe, will effectually guard against ill consequences from death by means of any disorder whatever. There may be some prejudice against such a practice among a people not accustomed to it; but in case of a very extraordinary mortality, such a measure may become absolutely necessary.

#### 9. CLEANING THE STREETS.

The streets can never be well cleaned if left to be executed by the individuals of the public, as ordered by the sections of the law Nos. 1, 2 & 3.—House-keepers will generally have it done by their servants, who will neglect it from idleness or indifference. All that can be expected from them is to sweep and wash the foot way, and in this even some attention should

be paid by their employers, or it will be but half performed. I am convinced that in many places near the wharves it is never done. Taken as a general rule, it will be found that the zeal which depends on individual exertion, when unattended by pecuniary advantages, is short-lived and feeble. The surest way is to pay for the doing of it—it will be but a trifle for each inhabitant, and then, instead of being an advocate for neglect, the house-keeper will become an inspector to complain of the omission.

#### 10. WATERING THE STREETS.

Another reason why the streets are not well cleaned, is the dust, which is occasioned by sweeping them in those months when cleaning is most required. In hot weather windows must be opened, and if so the furniture and goods will be injured, and much trouble be given to every inhabitant of the premises, as well as to all the neighbours. Some people go out of town and leave the business entirely to others, without any attention whatever from themselves. A few indeed, more particular than their neighbours, may use the watering pot to lay the dust, but that practice is not universal, or at least sufficiently so to be in any essential degree depended on.

A better method is to have water cocks in every street, and at a certain hour to set them running. The scavengers, with scoops, should sprinkle the carriage way, and the carts take it up immediately. It is important that the number of the watermen, the sweepers, the carts, and their attendants, should be proportioned to each other, which experience only can regulate; otherwise the water will be exhaled before the sweepers come, and the dirt be spread again by the carriages before the carts arrive, or else they will wait for each other. So many water cocks set running at a particular hour, will infallibly keep the sewers clear, and have the further advantage of being always in order in case of fire.

#### 11. PAVING THE STREETS.

The inconveniences and evils attendant on bad pavements are numerous. Wanting frequent repairs, they become more expensive than those which are well executed. The additional wear of carriages can more easily be imagined than calculated. They never can be well swept, for the broom cannot always reach to the dirt, at least it will take longer time, and therefore is an inducement for neglect. The holes are receptacles



for offensive articles, and even a hard rain, instead of contributing to cleanliness, has a contrary effect, by fermenting those substances, which in a dry state would, in some measure, continue inactive, and in a great degree harmless.

Paving streets should never after the first time be executed by the individual inhabitants of a city, but by persons appointed and paid by the Corporation. This method would not be so expensive as that directed by the 7th clause of the act.

Cobble stones, at best, make but an indifferent pavement. In the city of London they bring squared granite from Scotland, and find it turn out much the cheapest method. This article abounds in the eastern states.

Before I conclude, I beg leave to recommend one general practice, which will save much trouble and produce a greater perfection in all public works undertaken in this city and state. It is to procure every information on the subject from older countries. There is no man or society of men possessing so much intuitive knowledge as to be placed above the necessity of advice. By despising other people's experience we are often led into a situation past remedy; and when we may wish, in future, to render a work complete, we probably shall find that to obtain some radical principle which has formerly been by neglect omitted, we must throw down the whole fabric in order to get at the defect. Many additional lights may be thrown on all the subjects here only touched upon, particularly the articles of common sewers and vaults, the former of which in London is placed under a particular set of commissioners, and is in that great city become a subterraneous topography astonishingly complicated, a complicity easily avoided in New-York. In London improvements for ages have gradually been making without regard to the direction of the sewers; sometimes they run across the streets, sometimes oblique, and often under the houses; but in New-York the direction of the streets is usually the best course for the sewers.

A work like this must take time, and will require patience and perseverance, but the propriety of it must appear so evident that it ought to be begun as soon as the necessary information can be obtained.

In regard to the rest, that is, the regulation of lodging houses especially, and indeed some of the others, they may be made to take place in the course of the present season, and the remainder within a year or two.

48      *On promoting the Health, &c. of New-York.*

But every subject contained in these few pages is of such importance in point of *health, convenience, beauty* and *profit*; that an office, subject to the controul of the Corporation, should be appointed to carry the whole system into effect, and then New-York would, in truth, be the first city on the continent of America, and in time vie with some of the most splendid in Europe.



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 REVIEW.
 

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ART. I. *Discurso Apologetico, que convense clarissimamente con observaciones, y experiencias, la qualidad contagiosa de la enfermedad mortifera vulgarmente llamada vomito negro, fiebre amarilla, o mal de Siam: manifestativo de las causas comunes, y particulares productivas de la disposicion necessaria en los humores para engendrarse, &c. &c. i. e. An Apologetical Discourse, which most clearly proves, by observation and experiment, the contagious quality of the mortal sickness, vulgarly called black-vomit, yellow fever, or disease of Siam; shewn from a view of the general as well as the particular causes which produce the predisposition in the humours necessary to generate it, &c. &c. By Dr. D. Roque Josè de Oyarvide, &c. &c. 4to. pp. 76. Havanna. De Mora. 1801. With the necessary licenses.*

LITERARY and professional productions from Spanish America do not often come into our hands. But by the polite attention of John Morton, Esq. the consul of the United States at Havanna, this publication has been sent to us. And while we express our respectful acknowledgments to this gentleman for his regard to ourselves, we think much commendation is due to him for his vigilance in transmitting to his own country such intelligence as he can collect concerning the diseases by some deemed contagious in the place of his present residence. It manifests a patriotic spirit to send home the books printed abroad which treat of distempers said to be catching by means of a venom spreading from man to man, and which, according to this opinion, there may be danger of introducing in the ships which trade to such foreign ports.

The piece is divided into three parts. Of these, the first, which occupies forty three pages from the beginning, is the main body of the performance. The second is a supplement which runs to the seventieth page. The rest of the book is filled up by a dissertation on yellow fever, which is here republished from the newspapers, in which it had originally been offered to the inhabitants of Havanna, in November, 1800. This latter composition is addressed to one of the author's correspondents, and his object is to show, that black-vomit, or yellow fever, differs from common malignant and relaxing dis-



eases, and may emphatically be called, "deadly, putrid, malignant, venomous and atrabiliary" (p. 70). The whole is dedicated to Sig. Del Muro, governor of Cuba, &c.

Dr. Oyarvide professedly and zealously maintains the contagious nature of yellow fever, and, like other persons who advocate the same side of the question, either mistates facts, or reasons badly upon them. We discover nothing that looks like a careful induction from the phenomena; but the essay appears more a display of the writer's opinion on the subject, without troubling himself or his readers with proofs. To such people as know Dr. O. and have firm reliance on his understanding and candour, the pages he has penned may possibly be conclusive evidence; but for indifferent persons, like ourselves, who ask for something more than the *ipse dixit* of a reasoner, a great deal more testimony is required. Indeed, so barren is this "Apologetical Discourse" of new facts, and of new reasonings upon facts already known, that when we consider the incorrect and obscure view which Dr. O. has taken of yellow fever, we are almost inclined to think he is concerned in the partnership existing among the pamphlet-writing contagionists and importers of the United States. He could scarcely have written with less intelligence or edification if he had been aided by the most distinguished of that brotherhood.

But to satisfy our readers we shall give them a specimen of this author's manner of thinking and writing. He affirms (p. 4.) "that contagion is nothing more than an infection, with a resemblance in two or more bodies of the same nature. There are *three* kinds of it; the *first* communicating its mischievous ferment from one body to another by physical contact, as happens to fruits, one of which is rotten, and the contiguous one is sound; the *second* is by a fomes contained in the clothing and attire of persons labouring under leprosy or consumption, and is communicated by that means; the *third* form of it is that which is not only communicable by contact and fomes, like the two former, but to some distance. This latter kind is the more fierce, devouring and active, as it constitutes the contagious medium of volatile pestilential effluvia, connected and combined with a very viscid matter, and manifests itself in the plague, small-pox, measles, and other distempers, whose contagious particles impregnating the air, are elevated and transported by it to a distance. It is to be observed that the contagion which is communicated at a distance, is also communicable by contact and fomes; that which is so by fomes is also by contact; and the third kind alone is transfera-

ble to a distance; nevertheless, all the three are communicable by physical contact."

Perhaps this extract may not be understood. We shall attempt another from p. 6. where Dr. O. writes of the operation and constituent parts of contagion. "The best practitioners consider that three conditions are simply necessary for the communication of any contagious mischief whatever; the morbid body which emits the contagious miasmata, the sound body of its natural constitution which receives them, and the operative cause between the two, which is the contagious effluvium. That this operative cause may have its effect, three other circumstances are equally requisite. These are a predisposition on the part of the recipient, a due distance, and activity in the contagion or causal means; the failure of either of these deprives the means of its activity and defeats the contagion. This means or contagious miasma is nothing more than fermentible effluvia highly active, changed and corrupted, connected with a living miasma by corrupting and inhering in its natural mixture, and these being intimately mixed and closely combined, produce mischievous contagious effects in proportion to their activity and malignity."

It is probable this paragraph also is unintelligible. We think it savours so much of nonsense, that our chief inducement to translate it was to let our readers know what ideas of contagion were entertained among some of the Spanish physicians in the West-Indies. We hope they will excuse us from making a version of any more of it. They may be curious, however, to know his explanation of black-vomit; here it is. After citing Aristotle's opinion of putrefaction, he affirms that the exciting cause of black-vomit is the poisonous ferment or substance called "Atrabilis;" the nature of which is very acrid, corrosive, dissolving and resembling the tincture of cantharides! and supports it by the authority of Galen. To atrabilis he ascribes a world of destructive action, and among a great number of other sad effects, tells how it corrupts the humours, balsams and spirits, and dissolves the bonds which connect the soul and body, with much more in the same style.

In the course of the work, various cases are related of yellow fever imported in vessels, and caught by one person from another. On examining them they seem to be the same sort of mutilated and half-told narratives that have often been published among ourselves: a ship, for instance, arrives in a most foul and pestilential condition; a number of persons have died on the passage; the survivors are sickly; of the persons who

go on board, several are taken sick, and die too; and among the passengers and crew who are taken on shore the mortality continues; by their personal nastiness, some nurses, washerwomen, &c. are taken sick, and also lose their lives, &c. &c. from all this it is concluded the distemper is imported from a *foreign place*, and spreads by contagion: now all this requires further examination, and on making such examination it will turn out that the pestilence was *engendered on board the vessel from filth*, is not *catching from man to man* like the small-pox, but ceases as soon as *pure air, clean water and alkaline salts* are applied to the bodies, clothes and bedding of the sick. Neither foreign importation nor specific contagion have any agency in the business; it is a mere case of common nastiness turning to poison, and punishing those who wallow in it or neglect to purge it away—Such of our countrymen and friends as are in want of these sorts of facts to prove importation and contagion, will find a number of stories to their purpose in Dr. O.'s book.

He is very much puzzled to explain how Messrs. Girard and Helm escaped the contagion while attending the sick in the hospital of Bush-Hill, near Philadelphia, and, upon the whole, seems inclined to ascribe their escape not to the lack of contagion, but to the goodness of God.

Dr. O. like a consistent contagionist, contends, that the distemper is imported into Havanna, by the Anglo-Americans,\* from their cities on the continent, as they come thither to trade from their desolated and sickly settlements at home, (p. 45.) and, wonderful enough, from Havanna, it has been here pretended it was carried to Cadiz, though the Cadizians know better. See the account of their pamphlet in our present number.

The following is his opinion of the matter of black-vomit. "The productive cause of this is (p. 64.) an humour called atrabilis, of a poisonous nature, engendered in our machine; this is composed of particles or salts of an acrid, corrosive volatile alkaline or arsenical nature, so that they melt, dissolve and destroy excessively the substances contained in the mass of blood," &c. &c. How different such whimsical conjecture as this, from the bold and instructive experiments of CATHRALL, (Med. Repos. vol. iv. p. 163.) and PHYSICK, (ibid. vol. v. p. 129.)

\* Y no siendo menos considerable y temible el azote mortal vomito negro que amenaza y están muy expuestos à sufrirlo en alto y lastimoso grado los moradores de esta Ciudad è Isla, por el trato y comunicacion con los Ingleses de Norte America que aniversariamente la padacen en sus provincias, con tanto rigor que las tiene desoladas, &c. &c.



ART. II. *Rules of the Bahama Agricultural Society, established in 1801.* 4to. pp. 8. Nassau. Eve & Owen. 1801.

NO more than the title of this is mentioned, as the proceedings of the association may be seen in the succeeding article.

ART. III. *Communications on different subjects, addressed to the Bahama Agricultural Society.* 4to. pp. 63. Nassau, New-Providence. Eve. 1802.

SOME time in the year 1801, an agricultural society was formed at Nassau, with the intent of embracing the interests of the planters on Exuma, Long-Island, Caicos, and the other parts of the Bahama government. The public spirit of the founders of the institution concurred with two other causes to carry the project into execution; the one of which was the failure of their crops of cotton for several years past, and the other a diminution of the captures and prizes which had been a source of employment and wealth during the war.

Since the cessation of hostilities by the peace of Amiens, the planters of the Bahama Islands have turned their attention to the improvement of their lands, and already, in about a twelve-month since their society was embodied, a volume of their communications is laid before the public. Perhaps there are few regions where associations of this kind are likely to do so much good as in the present case, and it is pleasing to observe, that they who are concerned in the undertaking are fully sensible of it.

The pieces in the collection are ten in number, and are directed to various objects of Bahama cultivation and economy. They are on the following subjects: 1. *Colonel Broten's remarks on the management of Bahama plantations, particularly as respects crops of cotton and grass, trees and shrubs for ornament and for food of stock; bees, cement for terraces, tobacco, provisions for negroes, wells of fresh water, manure and indigo.* 2. *Experiments on the productiveness of the sugar-cane in the Bahamas, by James Tait, Esq.* 3. *Directions for the culture of coffee, by Duncan Stewart, Esq. of Jamaica.* 4. *A letter from Dr. Brickell on the advantage of covering up manure to prevent its exhalation and dissipa-*

tion. 5. *On the preservation of fruit-trees, by the President Nathaniel Hall, Esq.* Mr. H. observing his lemon, orange and lime trees to be covered with a kind of smut, and be over-run and devoured by pismires, ordered their trunks to be white-washed with strong lime as high up as their branches, and lime-water (aq. calcis) to be sprinkled over their leaves. This had the desired effect; the insects were killed or driven away, and the trees, renewing their foliage, became strong and vigorous. 6. *On the virtues of the chiococca, David's root, or snow-berry-tree, by the Rev. John Richards, secretary of the society.* This we insert entire.

“As there are but few papers relative to the natural production of these islands, at this early period of the society's meeting, an account of the virtues of some of our wild plants will not be unacceptable to the society, or uninteresting to the community. I have known the chiococca to have very salutary effects in healing obstinate ulcers. The remedy was applied by a Mr. Patterson towards curing the ulcers on the face of an old woman of the name of Brown, then seventy years of age and upwards; she was a pauper on the parish, and had medical advice, but without effect. The ulcers were very disgusting to the sight, and had eat the flesh to the cheek bone; the wounds were continually running. I met Patterson one day, who said, Mrs. Brown was in a deplorable case; he could cure her with some roots if he were permitted. I said, I thought he could do no harm, as she was in a very low state, and all former applications had proved useless. In a week afterwards, I went to see Mrs. Brown; I found the ichorous matter had ceased running, and that her face was healing very fast, and at last the ulcers entirely dried up. I was surprised at the sudden and salutary effects of the application. I then entreated Patterson to tell me what he applied, which, after much solicitation, he did—with the proviso of not divulging it then, and said it was the root of a bush called the rat-root, whose virtues he became acquainted with from some Mosquitto Indians. He shewed me the tree, and upon examination, found it to be the chiococca, or snow-berry-tree. The shrub is of the class pentandria, order monogynia: the shrub is not above nine or ten feet high, the highest; its long and slender branches, if so high, are supported by other trees, or trail along the ground; the leaves are elliptical, resembling those of a myrtle, or a jessamine; the bark of the trunk of the tree is whitish, and the bark of the root emits a strong smell, and is of a bitter taste, resembling that of the seneka root. The corol is small and

white, with the edge divided into five segments, containing five stamina longer than the corol, with a very slender style, of the same length with the stamina. The spike bearing the flowers and berries resembles that of an English white currant. The berries are round, of a snowy colour, and about the size of a small currant. In October and November the tree is covered with berries, as with a covering of snow. It grows in the bottom, south of Fort Charlotte, and on the side of the New Road, before the wood was cut down. There are two kinds of it on these islands: the one at New-Providence is small, and round berried; and there is a larger one on Harbour Island, oblong berried. Dr. Brown thus speaks of the virtues of the plant in his natural history of Jamaica. 'I have known it administered with great success in obstinate rheumatisms, and old venereal taints, in the spina ventosa, commonly called Boneake. I have frequently observed the stubborn complaints eased, and sometimes removed, by the continued use of this, and a few mercurial alterants; but it is best used in decoction, which may be made stronger or weaker, as occasion requires.' The smaller the plant is, the more sharp and biting the root is. Patterson's method was to give a tea cup full of the decoction, and then bathe the ulcers with it.

"From these observations, we may conclude the virtues of this plant, worthy of further trial by medical people."

7. *On the cultivation of the Otaheite or asparagus bean, by the Rev. Mr. Richards.* The writer describes and recommends an excellent variety of the phaseolus, a native of the South Sea Islands, and well adapted to the Bahamas. 8. *On the gum arabic tree, by the same.* One of the mimosas, which afford this valuable gum, is growing thriftily at New-Providence. 9. *A letter from Mr. Alexander Anderson, superintendant of the botanical garden at St. Vincents, to Governor Doredeswell; with an account of the exotic plants sent from the botanical garden in St. Vincents, to the Bahama Islands.* This we extract entire, as it affords an admirable example of the care taken by the British government to improve their colonies.

"About the end of the last year, I was requested by Sir Joseph Banks, to prepare a collection of the useful plants here, for your government. I have now the honour of sending them. I hope they will arrive safe, and prosper with you. The uncommon dry season in this island has very much retarded the increase of the young plants from the roots of the bread-fruit; consequently, a much smaller supply of them is sent than I intended. With difficulty have these been pre-



Communications on different Subjects.

served in the boxes for some months past. But I will always be happy in supplying your government with them, or any other production here, as good opportunities offer.

"All at present sent are valuable in commerce, medicine, food, æconomy, or as fruits. Should gentlemen in your islands wish for ornamental or curious plants, they will be gratified as soon as in my power.

"I think the oriental spices will thrive in your colony. From that idea, I have sent a large supply of cinnamon. The clove is a tender plant here, while young; probably it may be more hardy with you. I am sorry three plants are all at present I have in a state for transportation.

"As the product of the cochineal is a great desideratum in the British colonies, I have sent some plants of the cactus the insects chiefly exist on. In my opinion, the Bahamas are well adapted for that culture, and the best situated of any colony for obtaining the insect from the Spanish Main. That might probably be accomplished by some address and a little money, by the way of La Vera Cruz or the Bay of Honduras; and I think it is an object that merits the attention of the inhabitants of your government. I have the honour to be, &c.

*List of 466 plants, sent for the government of the Bahama Islands, of the following species, 53 in all: to wit,*

Artocarpus incisus, *Otaheite Bread Fruit.*

East-India ditto.

Seed bearing ditto, *Malabar Chesnut.*

Artocarpus integrifolius, *Jack.*

Laurus Cinnamomum, *True Cinnamon.*

Laurus Cassia, *Cassia lignea.*

Caryophyllus aromaticus, *Clove.*

Cycas circinalis, *Sago.*

Mangifera Indica, *Mango.*

Eugenia Malaccensis, *Malacca Apple.*

Inocarpus edulis, *Otaheite Chesnut.*

Jambolisera pedunculata, *Otaheite Plum.*

Aleurites triloba, *Otaheite Walnut.*

Spondias dulcis, *Otaheite Apple.*

Terminalia Catapa, *St. Helena Almond.*

Copaifera officinalis, *Balsam Capivi.*

Quassia amara, *True Quassia.*

Mimosa Nilotica, *Gum Arabic.*

Curcuma longa, *Turmerick.*

Tecktona grandis, *Tick Wood.*

*Myristica Americana*, *Tobago Nutmeg*.  
*Thea viridis*, *Green Tea*.  
*Olea Europea*, *Olive*.  
*Carolinea Princeps*, *Tobago Bread-Nut*.  
*Aloe perfoliata*, *Succotrine Aloe*.  
*Cinchona cymosa*, *St. Lucia Bark*.  
*Maranta Arundinacea*, *Arrow-Root*.  
*Cordia dichotoma*, *Otaheite Yellow Dye*.  
*Sapindus edulis*, *Letchee, Chinese*.  
*Acca disticha*, *Gooseberry Tree*.  
*Averrhoa bilimbi*, *Cucumber Tree*.  
*Areca Catechu*, *Areca or Beetle-Nut*.  
*Quassia Simaruba*, *Simaruba*.  
*Epidendrum Vanilla*, *Vanilla*.  
*Convolvulus Batatas*, *Six Weeks Potatoe*.  
*Kæmpferia Galenga*, *Galengal*.  
*Otaheite Plantain*, *two kinds*.  
*Andropogon Schananthus*, *Lemon-Grass*.  
*Prunus Noyeau*, *Noyeau Plant*.  
*Bourbon Cotton*.  
*Dorstenia Contrayerva*.  
*Bignonia ophthalmica*, *Eye Vine*.  
*Ilex vumatori*, *Paraguay Tea*.  
*Justicia pectoralis*, *Garden Balsam*.  
*Asclepias asthmatica*, *East-India Ipecacuanha*.  
*Piper Nigrum*, *Black Pepper*, as yet doubtful.  
*Piper Betel*, *Betel Plant*.  
*Piper longum*, *Long Pepper*.  
*Cissampelos Pareira*, *Pareira brava, of the Brasils*.  
*Cactus Cochinitifer*, *Cochineal Plant*.  
*Aristolochia odoratissima*, *West-India Snake-Root*.  
*Allamanda cathartica*.  
*Tacca Pinnatifida*, *Otaheite Potatoe*, a Root.

“ *Description, uses, &c. of the plants.* ”

“The *Bread Fruit* grows fast to a large tree. In a good situation it will produce fruit in two years. It loves a free circulation of air, and should be planted at no less distance than sixty feet from any other tree, and nearly the same from one another. There are six varieties or kinds of it, differing in the leaves as in the fruit: The fruit also differs in size, from four to ten lbs. weight. It is fit for use when full grown, before it begins to ripen; in that state it is known from the skin turning of a brownish colour, with external concretions of the juice.

When ripe, it turns yellow and soft, to smell and taste sweet, by some esteemed as a fruit.

“The common and best mode of cooking it, is baking it entire as a loaf of bread, in an oven; or it may be sliced and toasted as bread without previous baking. Many like it boiled as a yam or potatoe; but, in short, it may be cooked as any esculent root. In a pudding it is excellent.

“The fruit has no seeds. Nature increases the plant by throwing up numerous plants from the roots, often at the distance of thirty or forty feet from the stem. They may be cut off when in height from six to twenty-four inches. Before that operation the part of the root cut off with the plant must have a few fibrous roots at it, the more the better; moist weather is the properest for doing it. After planting out of the plants, they should be sheltered a day or two with small branches of any thing that will keep the sun from them; all the large leaves ought to be cut off, as they immediately wither, and are apt to infect the stem. After they are rooted they are very hardy, and require no further attention unless defending them from cattle, as they are fond of the leaves and young tops. Rats are remarkably fond of them. When they arise to the height of ten or fifteen feet, care should be taken in clearing the ground around, not to destroy the buds on the roots which form the young plants. The roots destined by nature for their purpose, run horizontally on, or a little under the surface of the earth.

“The *East-India* kind was brought from Timor. It is a native of several parts of the East-Indies. Its habit is much the same as the former. The leaves are of a whiter colour, but the fruit differs much in size and shape. It is rough, the surface defaced, not of such a farinaceous substance as the Otaheitean, and at best a poor substitute for it. Like the former, it has no seeds, and like it, is increased by suckers.

“The *Seed-bearing* kind, or *Malabar Chesnut*, is also a native of the East-Indies and Ladrone Islands. It very much resembles the Otaheite Bread-Fruit, only its leaves are of a darker green and not so much cut, the branches more spreading. The fruit has prickles like the hedge-hog, and contains no esculent substance but seeds. They are nearly the size and shape of chesnuts, roasted or boiled, more farinaceous, and very nutritive. The negroes are very fond of them. This kind is propagated from its seeds only, as it throws up no suckers from the roots. The seeds vegetate in a few days, and must not be kept more than two or three days.



"The fourth kind, or *Jacca Tree*, differs very much in its habit and fruit from the three former. It is an elegant tree, grows rather slower than the Bread-Fruit. The fruit is much esteemed in the East-Indies. It grows to an enormous size, but rough and ill shaped, the largest as yet known frequently forty or fifty lbs. weight. The fleshy part is yellow, very sweet, but not relished by palates unaccustomed to it. The seeds resemble those of the Malabar Nut, and are equally good. Propagated only from seed.

"All the four thrive in various soils and situations, but loamy seems the most congenial.

"*Cinnamon*, two kinds. It thrives in any soil or situation, and is remarkably hardy. It is propagated by seeds, cuttings, and layers. In four or five years from seeds, the primary branches are fit for barking. The best time for this operation is when the sap is ascending. The bark acquires the greater part of its strength in dyeing.

"*Cassia Lignea*, as yet doubtful whether a distinct species from the cinnamon or not; however, that now sent under that name, very different from it. The leaves taste and smell much stronger of the cinnamon than those of the former, and in culinary purposes are a good substitute for the cinnamon. The bark has very little of the properties of the true cinnamon, except that from the trunk and larger branches. This kind is propagated from seeds only.

"The *Clove* here requires shelter from winds and rains when young till four or five feet high. There is a great probability of its thriving in the Bahamas, as it does not agree with much moisture. It may be increased by layers. The leaves are a good substitute for cloves.

"The *Sago* is the hardiest of plants, and will grow among rocks, but grows very slow. It increases itself by suckers from the bottom of the stem.

"The *Mango* thrives best in a moist situation, not exposed too much to the wind. Raised from seeds only.

"*Malacca Apple*, a beautiful, fast growing, little tree. The fruit cooling and pleasant. From seeds.

"*Otaheite Chesnut*, a small tree, likes a rich and rather stiff soil. The kernel of the fruit eats like the Windsor Bean. Raised from seeds.

"*Otaheite Plum*, an elegant fast growing tree. The fruit in clusters like grapes, and much esteemed. Requires a soil the same as the chesnut. It is propagated by seeds and layers,

" *Otaheite Walnut*, grows fast from seeds. The seeds used in Otaheite as a substitute for candles. Kernel esculent, as good as the walnut. It thrives in any soil or situation.

" *Otaheite Apple*, a large and fast growing tree, like the Hog-Plum, and produces very fine fruit in great abundance. It loves a good soil. Grows from cuttings and seeds.

" *St. Helena Almond*, grows very fast. Its branches extend horizontally a great distance, and form a fine shade. It thrives in any soil or situation. The kernel of the fruit small, but superior to the almond.

" The *Balsam Capivi* grows to a large, elegant tree. From the old trees the balsam exudes at certain seasons of the year, but in small quantity. It is chiefly obtained by tapping. It loves a strong clay soil, but will grow in almost any. From seeds only.

" The *True Quassia*, a valuable medicine, a small and elegant tree, will grow in sandy or rocky situations. From seeds only.

" To the *Gum Arabic*, your soil and climate are congenial.

" *Turmerick* increases itself rapidly from the roots. A common garden soil the best. The roots are dry for use when the leaves decay, like the ginger. Increased by roots.

" The *Tick*, or East-India Oak, loves a strong clayey soil. It grows to a large tree. The most durable and hard of woods.

" *Tobago Nutmeg*, is a bastard species. The nut tastes a little of the spice, the mace less. The juice of the tree is used on the continent in medicine and œconomy. It is an elegant tree, loves a low moist soil. It is not impossible but it may be improved, and acquire more of the Aroma, by change of climate and soil. The plants should be planted not far from one another, as the male and female flowers are in different individuals.

" The *Tea Plant* will thrive with you, if a rather moist soil can be found for it. It is increased from cuttings. The plants now sent should be kept in the boxes in a shaded situation, and watered every evening in dry weather, until they have pushed young shoots from two to three inches long, when they may be planted.

" To the *Olive*, the climate and soil of the Bahamas must be congenial. To be treated as the tea.

" *Tobago Bread-Nut*, an elegant and fast growing tree, requires a moist soil; the seeds equal to an Irish potatoe. From seeds only.

"The *Aloe*, I should think, will be at home in the Bahamas, and may be rendered an useful production. It increases itself fast by suckers.

"The *St. Lucia Bark* requires a moist soil. It is a most beautiful tree, nor is there any doubt but its bark in many cases is superior to the Peruvian.

"*Arrow-Root*, very valuable; it increases fast by roots. Your islands probably are already full of it.

"*Otaheite Dye*, a handsome shrub, grows fast from seeds.

"*Sapindus* or *Letchee*, grows to a large tree, the fruit much esteemed by the Chinese, requires a rich soil. It propagates itself by suckers from the roots.

"*Gooseberry Tree*, grows fast. It is handsome, and yields an astonishing quantity of fruit; the fruit is excellent for tarts and for pickling. From seeds only. It thrives in any soil or situation.

"The *Cucumber Tree*, handsome, always in flower and fruit. The fruit sliced, with salt and pepper, not a bad succedaneum for cucumber; a strong, pleasant acid, makes an excellent pickle. From seeds. A garden soil best.

"The *Beetel*, or *Areca-Nut*, an East-India luxury, but a beautiful palm, grows fast, and will thrive in the Bahamas.

"*Simaraub*, a tolerable large tree; a rather moist soil and low situation best. By seeds only.

"The *Vanilla* must be planted at the root of a large spreading tree. The more moist the situation is the better. Readily increased by cuttings.

"The *Sweet Potatoe*. The best kind in these islands, very productive; any part of the stems grow. A light or sandy soil the best.

"The *Galengal* increases itself from the roots, like the Turmeric; any soil will do.

"The *Otaheitean Plantain* is superior to the common Plantain of these islands, requires a sheltered situation; the moister the soil the better.

"The *Lemon-Grass* will thrive remarkably well; well known in the Materia Medica as a medicine. Increased from slips.

"The *Bourbon Cotton*. The plant red, the cotton very fine.

"The *Contrayerva* delights in light sandy soil. Increased by slipping the roots.

"The *Eye Vine*, a climbing plant, should be planted at the roots of trees or sustained by poles. The juice of the cortical



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"The *Contrayerva* delights in light sandy soil. Increased by slipping the roots.

"The *Eye Vine*, a climbing plant, should be planted at the roots of trees or sustained by poles. The juice of the cortical

part of the root, from two to three drops into the eyes, an effectual remedy in the most violent inflammation. From seeds.

"The *Paraguay Tea* will thrive in any common soil. Increased by suckers.

"*Garden Balsam*. Syrup or decoction sweetened, valuable in colds and coughs, and all complaints of the breast. The leaves bruised cure fresh wounds. Readily increased by slipping the roots.

"*East-India Ipecacuanha*, a climber, will require poles; the roots a medicine for asthma. From seeds and slipping the roots.

"*Black Pepper*, so far doubtful whether the true or not, must be planted at the roots of trees. From cuttings.

"The *Beetel Plant*, to be treated as the former.

"The *Long Pepper*, ditto.

"The *Pareira Brava* requires poles.

"*Cochineal Plant*. A leaf cut off and put on the ground grows. It is the receptacle and nourishment of the Cochineal Insect.

"The *West-India Snake-Root* is a valuable medicine, possessing nearly the same virtues as the Virginian. Increased by slipping the roots.

"*Allamanda*, is an elegant ever-flowering shrub; infusion of the leaves a cathartic; a moist soil the best. Increases by suckers.

"The roots of the *Otaheite Potatoe* resemble the common or Irish Potatoe. In Otaheite they reduce them to a farine or powder, before they are esculent; when boiled entire they are better. From roots.

"The *Noyeau Plant* is propagated by cuttings and seeds."

10. *Remarks on the trees and plants sent by Mr. Anderson, which are now alive and thriving in the Bahamas.* By this it appears that two kinds of bread-fruit, sago, mango, Otaheite chesnut, apple and walnut, St Helena almond, quassia bitter, Tobago bread-nut, arrow-root, gooseberry tree, cucumber tree, lemon-grass, true cinnamon, European olive, cochineal cactus, mimosa gum-arabic, black pepper, and some others have succeeded and are growing in the Bahamas.

From this favourable specimen of the society's labours, we augur a continuance and extension of them, and on a future occasion we shall feel much pleasure in relating their successful progress.



ART. IV. *Discurso sobre el Origen, Progresos, Metodos Curativos, y Demas Circunstancias relativas a la Enfermedad Maligna Contagiosa acaecida en la ciudad de Cadiz desde Principios de Agosto hasta fines de Octubre, Ano de 1800. Por un Apasionado a la Medicina; i. e. A Discourse on the Rise, Progress, Manner of Treating, and other Circumstances relative to the Malignant Contagious Sickness which happened in the City of Cadiz from the beginning of August to the end of October, of the Year 1800. By a Lover of Medicine. 12mo. pp. 47. Cadiz. Murguia.*

CADIZ has furnished a small publication, which we notice on account of its connection with the yellow fever in that city, which was described in Med. Rep. vol. v. p. 103.

After some introductory remarks, the writer of this little tract proceeds to give his opinion, that it was not a local or stationary epidemic (p. 13); that it began in the street called Sopranis, and spread far and wide from that place, as from a centre (p. 14); and "that positive facts prove that the sickness had nothing *stationary* [local] in its origin; but that some foreign morbid body, of an intensely active and contagious quality, produced, in this neighbourhood, the malignant, putrid, contagious calenture, which, as well by the rapidity of its career as by the gradation of the symptoms, allowed no time for the true professors of the art to correct the disorders which it produced." (p. 15). He confirms the account of the symptom of black-vomiting.

He then considers the dejection of mind, and the want of articles for food and clothing, the common attendants on sieges and blockades, as co-operating causes. He mentions the great rains which prevailed in January, and during the spring; and the strong easterly winds which continued during the whole summer. Notwithstanding all these coincidences, he still has recourse "to a morbid foreign body, of a prodigiously contagious power, which altered the natural constitution and state of health that the inhabitants enjoyed," &c.

From the tenor of the piece, we perceive that the writer, who, by the bye, conceals his name, combats the prevailing opinion, or "easy belief," in Cadiz, which is, that the distemper was local, and proceeded from changes wrought in the physical qualities of the atmosphere, and from the pas-

sions of the mind then prevailing among the inhabitants;\* and we regret that he has not been more usefully employed. His labours, however, are neither so long nor so dull as some of the contagionists in the United States. We hope, for the comfort of the Cadizians, he does not fatigue them so often.

But he does not pretend to explain how the spark of contagion was introduced. He has not a word of the tale about importation from the Havanna. In short, like the rest of the advocates of the same doctrine, he makes a very poor story of it. He affirms, however, one fact perfectly conformable to our own experience in America, that the people who were out of the city, and had not suffered the disease, were attacked, on their return to their houses, with such violence, that a large proportion of them were killed (p. 38). The rest of this short pamphlet we pass over as containing nothing particularly memorable.

ART. V. *Histoire des Chênes de l'Amerique, ou Descriptions et Figures de tous les Espèces et Variétés des Chênes de l'Amerique Septentrionale, Considerés sous les Rapports de la Botanique, de leur Culture et de leur Usage. Par André Michaux, Membre Associé de l'Institut National de France, de la Société d'Agriculture de Charleston, Caroline Meridionale, &c. that is, An History of the Oaks† of America, or Descriptions and Plates of all the Species and Varieties of Oaks in North-America, considered Botanically, Agriculturally and Economically. By Andrew Michaux, Member of the National Institute of France, of the Agricultural Society of Charleston, South Carolina, &c. &c. Large folio. Crapelet. Paris. 1801. With thirty six fine Copperplates.*

ONE of the establishments which gave splendour to the late monarchy of France, was that of botanical gardens in various parts of her colonies and of foreign countries. A piece

\* "Manifestado el que no aparecen razones convincentes para la *creencia* facil de que la calentura maligna, pútrida padecida fué estacional, ó proveniente de la alteracion de las qualidades sensibles del ayre, y pasiones de ánimo, solo queda el recurso de pasar á la investigacion de si fué originada de las qualidades insensibles de aquél, ó de algun otro principio no residente en aquellas," &c. &c.

† The North-American oaks had been partially described as long ago as 1771, by a careful observer: this was JOHN PHILIP DU ROI, who published his observations in two volumes octavo, at Brunswick in Germany.

of land, of moderate fertility and extent, hired or purchased by the government, served in the distant country where it was situated, as an home for a botanist, a repository for the seeds he might collect, and a nursery for the plants he should cultivate. Men of science are seldom avaricious: Devoted to nature, they have ordinarily but few acquired or artificial wants. A moderate provision contents them. A salary which would appear trifling and inadequate to the support of a luxurious person in fashionable life and in a great city, is amply sufficient for the sustenance and support of a student of natural history, devoted to the objects of his mission, and dwelling among forests, and plants, and trees, in rural simplicity.

It is almost incredible how much good may be done in this way by a government, at a very trifling or insignificant expense. The whole establishment of such a man would not require more for ten years, than a minister plenipotentiary, or an envoy extraordinary, consumes in one. And for this compensation, small as it is, the botanical missionary transmits to the country which employs him, the vegetable productions, seeds, seedlings, herbariums, and specimens of all kinds, from the region in which he resides; thus at once gratifying rational curiosity, and enriching his native land with the useful and valuable species of the remotest islands and provinces of the earth.

The superb and elegant work before us is one of the products of two botanical gardens and farms which the late King of France had provided, one in Bergen county, within eight or nine miles of the city of New-York; the other in South-Carolina. This resident and pensioner was the diligent and accurate MICHAUX, the author of this History of American Oaks. And while our native citizens are ignorant or incurious of the leafy tenants of their forests, the more enterprising and industrious sojourners from foreign countries discover, describe and arrange them, and teach us how to know and understand them.

It is matter of scientific gratification that this botanical institution was not ruined by the dissolution of the monarchy. Mr. Michaux did indeed return to France, with his collection of treasure, since the revolution began; but he was immediately employed by the government to accompany captain Barcein on a voyage to the South-Sea. And his report and collection of North-American productions were deemed so ample and complete, that Mr. CHAPTAL, the minister of the interior, has thought it no longer necessary to support these foreign institutions, as their main object has been fully answered and ob-



tained already. How differently nations act! France has employed Michaux for many years, until the work in which he was engaged was done: about four or five twelvemonths ago Mr. MASSON passed through New-York, on a mission from Great-Britain to explore the botanical productions of Canada; and yet, with these examples before them, so laudable and so worthy of imitation, not a single botanical garden or mission has ever been established by any public authority, political or academical, that we have heard of in America. We hope this reproach will not attach long to the United States.

During his tours and expeditions through the woods, among numberless other things, Mr. Michaux availed himself of the opportunities which presented themselves to gain an acquaintance with the numerous species and varieties of *oaks*. The exceeding importance of this genus of plants recommended it to his notice, and he has applied a large share of his excellent and discriminating botanical talents to render the history of the *quercus family* as plain as possible. Indeed, so complete does it seem, that the professed phytologist will have little to wish for in future, than to traverse the swamps and the wilderness, and see in their native situations, in all their circumstances of vigour, soil and season, the living productions which Mr. Michaux has so faithfully delineated in his book.

But it is time to introduce our readers a little more particularly to Mr. Michaux as an author: this we do by presenting them with a translation of part of his introduction, where he gives some account of the *natural* history of the oak. (Introduct. p. 4).

"The oak grows naturally in all parts of the temperate zone, in Europe, in Asia, in America, and even in Africa. The cultivation of it requires peculiar care, as transplanting, grafting, and other means of reproduction, are not always favourable to it. Nature has particularly formed this tree for vast forests. There it reigns sovereign over the other vegetables, and furnishes abundant nourishment for animals of different natures. In Europe, the deer, the squirrel, and the wild-boar, live during the whole winter on the acorns of our woods; in Asia the pheasants and wild pigeons share them with the beasts; in North-America, the bear, the squirrel, the pigeon, and the wild turkey, are fed also by the nuts of the oak. Several sorts of quadrupeds and birds on that continent, after having consumed the fruits of a territory, emigrate in innumerable flocks and droves to regions where these productions are more plentiful.

"Of all the trees, the oak is that whose timber is most generally and most advantageously employed. It serves for the construction of houses and of ships, for instruments of husbandry, &c. it affords articles useful in medicine; it is of almost indispensable necessity to the tanner, the dyer, &c. indeed, it is the daily support of fire, so necessary to our existence.

"The oak family comprehends a great number of species which are not known; and the greater part of those which grow in America appear under such diversified forms when they are young, that we cannot be certain what they are until they have arrived at maturer age, or have got their full growth. It seems that nature has intended to multiply this tree, and render it of general utility, by causing to grow in the same latitudes various species which could accommodate themselves to the diversity of temperature and soil. For the oak does not always grow in the forests, nor elevate its top to a very great height. There are places which produce nothing but dwarf oaks, such as the *kermes* oak (*quercus coccifera*), and some others, which are naturally small; while there are others which grow among the rocks, on the shores of the Mediterranean Sea, whose moderate height is owing merely to the dryness of the soil where they have taken root. There are also some varieties produced by causes purely accidental; in North-America there is a dwarf Scion-bearing oak (*chênes nains stolonifères*), whose multiplied suckers cover vast tracts of country. The meadows (*savannas*), situated in the middle of the forests of this continent, are burned annually by the savages and by the new settlers, for the purpose of renewing the grass, attracting deer, and pasturing their cattle. The fire spreading thence into the woods and destroying the great trees, the horizontal roots of several species of oak detached from the trunk, reproduce by themselves, and separately, shoots which produce fruit afterwards when not more than two or three feet high. Every bundle or assemblage of these shoots, from the same root (*souche*) may be considered as a dwarf-tree, or without a stem, (*tige*); for the fire, in consuming these trees down to the root, produces the same effect that the cutting off the stem and trimming does in cultivated pear-trees, which otherwise would have become tall trees, but which, by these repeated operations, are made to remain dwarfs, and to put forth fruit-bearing branches near their very roots. Several travellers not having had time to observe these oaks with sufficient care, have taken them to be particular species; but those whose acorns have been planted,

have sent forth, like all others, a descending root, without producing suckers; whence it seems probable there are no stoloniferous oaks.

“ Oaks present numerous *varieties*, and the determination of the *species* to which they belong is attended with great difficulties. Frequently an intermediate variety appears so to approximate two species, that it is hard to determine, from an examination of the leaves, to which of the two species the variety ought to belong. Some species, apt to vary during their tender age, appear then so different, that the characters of the foliation are insufficient to determine and recognize the same species in young and old individuals. Several others, on the contrary, are so exactly uniform that the specific distinctions can only be established on the fructification, which is itself subject to exceptions and variations. It is only by comparative observations on individuals, considered both when grown and growing, that we can arrive at the distinction of the species that resemble each other so nearly, and at the distribution of the varieties to their proper species when found.

“ The description of the oaks of North-America has been hitherto obscure, for several reasons: 1. The botanists who have visited those countries have given but detached observations upon those trees, and have not attended sufficiently to the characters of the fructification: 2. The authors who have treated on those subjects after them, have often united several species under the same denomination: and, 3. The figures they have given of American oaks, cultivated in Europe, are not always correct, because their growth there is retarded by a temperature, which is less favourable to them than their native land, and because they there preserve longer the varieties of foliation, which characterize their growing state.

“ To clear up my doubts, I have planted and cultivated, during my residence in America, all the species which I have had opportunity to observe and collect; and after two years, I had the satisfaction to recognize all the varieties which had perplexed me so much when I traversed the woods.”

The species and varieties which Mr. Michaux describes are *twenty-nine*; and the arrangement of them he has made out in the following manner; to wit:

#### *Methodical Disposition of American Oaks.*

##### SECTION I.

*Quercus*, foliis adultæ plantæ muticis; fructu pedunculato; fructificatione annua:—Specie 6<sup>ta</sup> bienni.



Foliis—lobatis.

- ### White oaks.

**Foliis—dentatis.**

- ### Division III.

Sp. 6. *Quercus virens*—live-oak of Carolina.

Quercus, foliis adultæ plantæ setaceo-mucronatis; fructu  
subsessili; fructificatione bienni.

**Foliis—integris.**

- Sp. 7. *Q. Phellos*—var. *sylvatica*—willow-oak.  
   *maritima*—sea-willow-oak.  
   *pumila*—dwarf-willow-oak.  
 Sp. 8. *Q. Cinerea*—upland willow-oak.  
 Sp. 9. *Q. Imbricaria*—shingle-willow-oak.  
 Sp. 10. *Q. Laurifolia*—swamp willow-oak.  
   *obtusifolia*.

Foliis—breviter lobatis.

- Sp. 11. Q. Aquatica—water-oak.  
 Sp. 12. Q. Nigra—black-oak.  
 Sp. 13. Q. Tinctoria—var. *angulosa*—great black-oak—  
   Champlain black-oak.  
   *sinuosa*—quercitron-oak.  
 Sp. 14. Q. Triloba—Downy black-oak.

## Division III.

Foliis—profunde multifidis.

- Sp. 15. Q. Banisteri—running downy-oak.  
 Sp. 16. Q. Falcata—downy red-oak.  
 Sp. 17. Q. Catesbæi—sandy red-oak.  
 Sp. 18. Q. Coccinea—scarlet-oak.  
 Sp. 19. Q. Palustris—swamp red-oak.  
 Sp. 20. Q. Rubra—red-oak.

We have been the more particular to exhibit this systematic arrangement of the oaks, because we believe it will be welcome to our readers, and enable them the better to understand this difficult genus of plants. To the botanist this volume must be a rare treat: and the husbandman, and even the political economist, may peruse many of the descriptions with advantage. As a proof of this, we refer them to the account Mr. Michaux has given of the live-oak of the Southern States; a tree which, on account of the extraordinary durability and strength of its timber, is of unspeakable value to the country—though, alas! wastefully destroyed, and not protected as it ought to be by the proprietors, the States, or the nation.

Mr. Michaux recommends the cultivation of it on the sandy coasts of France, bordering on the Mediterranean Sea and the Atlantic Ocean.

ART. VI. *The Chemical Pocket-Book, or Memoranda Chemica, arranged in a Compendium of Chemistry, with Tables of Attractions, &c. calculated as well for the occasional Reference of the Professional Student, as to supply others with a general Knowledge of Chemistry. With the latest Discoveries. By James Parkinson. To which is added, an Appendix, containing the principal Objections to the Antiphlogistic System of Chemistry. By James Woodhouse, M. D. Professor of Chemistry in the University of Pennsylvania, &c. With Copperplates. 12mo, pp. 215. Philadelphia. J. Humphreys. 1802.*

BOOKS, it has been said, are multiplying so fast, that their number perplexes and bewilders the inquirer. On some subjects this is an inconvenience seriously felt and complained of. But chemistry has little cause, as yet, to lament the in-

crease of vain and useless volumes. A science whose principles are of such extensive use and application as this, admits of wide and various discussions. For it may be considered as less a science by itself, than an assemblage or cluster of sciences. This is so remarkably the case, that to chemistry belongs, more than to any other department of human knowledge, the epithet of "*scientia scientiarum*," the science of sciences.

Herein the progress of discovery is so rapid, that a frequent revision of what we have learned is necessary, that we may the more correctly adapt the new to the old. Besides the stock of facts which is thus daily accumulating, new language, new opinions, and new arrangements, are, from time to time, offered, both by the ingenious speculator and the sober interpreter of nature. These it is becoming and needful for the young student to become acquainted with immediately, and the more advanced one to add to his former acquirements as easily and as conveniently as he can.

From a perusal of the book before us, we have no reason to complain of the author for having compiled and published it. On the other hand, Mr. Parkinson has offered to his readers a handsome collection of "chemical memorandums," which the unlearned may peruse with instruction, and even the learned consult with pleasure. It seems to us likely that this manual of facts and doctrines was serviceable in Great-Britain, and we congratulate our scientific friends on its republication in America. Such a familiar, and, at the same time, comprehensive view of chemistry, must operate as a strong encouragement for the tyro to begin, and for the adept to continue his researches through this beautiful and boundless field of nature.

Mr. P. does not aim at novelty: his humbler, and, perhaps, more useful purpose, is to give a display of the present state of the science. With this intention, he has gathered from distant and respectable sources the most important information he could find. This he has extracted from the different essays, memoirs and tracts which he met with in reading, and has digested into short but perspicuous paragraphs. And, that he might deal fairly with his reader, he has very often quoted his authority for the information he presents. *Suum cuique tribuere* appears to have been the sentiment which governed Mr. P. while he was engaged in this performance; for he liberally ascribes to their proper authors a great proportion of what he has collected and arranged. His book, therefore,



go on board, several are taken sick, and die too; and among the passengers and crew who are taken on shore the mortality continues; by their personal nastiness, some nurses, washerwomen, &c. are taken sick, and also lose their lives, &c. &c. from all this it is concluded the distemper is imported from a *foreign place*, and spreads by contagion: now all this requires further examination, and on making such examination it will turn out that the pestilence was *engendered on board the vessel from filth*, is not *catching from man to man* like the small-pox, but ceases as soon as *pure air, clean water and alkaline salts* are applied to the bodies, clothes and bedding of the sick. Neither foreign importation nor specific contagion have any agency in the business; it is a mere case of common nastiness turning to poison, and punishing those who wallow in it or neglect to purge it away—Such of our countrymen and friends as are in want of these sorts of facts to prove importation and contagion, will find a number of stories to their purpose in Dr. O.'s book.

He is very much puzzled to explain how Messrs. Girard and Helm escaped the contagion while attending the sick in the hospital of Bush-Hill, near Philadelphia, and, upon the whole, seems inclined to ascribe their escape not to the lack of contagion, but to the goodness of God.

Dr. O. like a consistent contagionist, contends, that the distemper is imported into Havanna, by the Anglo-Americans,\* from their cities on the continent, as they come thither to trade from their desolated and sickly settlements at home, (p. 45.) and, wonderful enough, from Havanna, it has been here pretended it was carried to Cadiz, though the Cadizians know better. See the account of their pamphlet in our present number.

The following is his opinion of the matter of black-vomit. "The productive cause of this is (p. 64.) an humour called *atrabilis*, of a poisonous nature, engendered in our machine; this is composed of particles or salts of an acrid, corrosive volatile alkaline or arsenical nature, so that they melt, dissolve and destroy excessively the substances contained in the mass of blood," &c. &c. How different such whimsical conjecture as this, from the bold and instructive experiments of CATHRALL, (Med. Repos. vol. iv. p. 163.) and PHYSICK, (ibid. vol. v. p. 129.)

\* Y no siendo menos considerable y temible el azote mortal vomito negro que amenaza y están muy expuestos à sufrirlo en alto y lastimoso grado los moradores de esta Ciudad è Isla, por el trato y comunicacion con los Ingleses de Norte America que aniversariamente la padacen en sus provincias, con tanto rigor que las tiene desoladas, &c. &c.

ART. II. *Rules of the Bahama Agricultural Society, established in 1801.* 4to. pp. 8. Nassau. Eve & Owen. 1801.

NO more than the title of this is mentioned, as the proceedings of the association may be seen in the succeeding article.

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ART. III. *Communications on different subjects, addressed to the Bahama Agricultural Society.* 4to. pp. 63. Nassau, New-Providence. Eve. 1802.

SOME time in the year 1801, an agricultural society was formed at Nassau, with the intent of embracing the interests of the planters on Exuma, Long-Island, Caicos, and the other parts of the Bahama government. The public spirit of the founders of the institution concurred with two other causes to carry the project into execution; the one of which was the failure of their crops of cotton for several years past, and the other a diminution of the captures and prizes which had been a source of employment and wealth during the war.

Since the cessation of hostilities by the peace of Amiens, the planters of the Bahama Islands have turned their attention to the improvement of their lands, and already, in about a twelve-month since their society was embodied, a volume of their communications is laid before the public. Perhaps there are few regions where associations of this kind are likely to do so much good as in the present case, and it is pleasing to observe, that they who are concerned in the undertaking are fully sensible of it.

The pieces in the collection are ten in number, and are directed to various objects of Bahama cultivation and economy. They are on the following subjects: 1. *Colonel Broten's remarks on the management of Bahama plantations, particularly as respects crops of cotton and grass, trees and shrubs for ornament and for food of stock; bees, cement for terraces, tobacco, provisions for negroes, wells of fresh water, manure and indigo.* 2. *Experiments on the productiveness of the sugar-cane in the Bahamas, by James Tait, Esq.* 3. *Directions for the culture of coffee, by Duncan Stewart, Esq. of Jamaica.* 4. *A letter from Dr. Brickell on the advantage of covering up manure to prevent its exhalation and dissipa-*

tion. 5. *On the preservation of fruit-trees, by the President Nathaniel Hall, Esq.* Mr. H. observing his lemon, orange and lime trees to be covered with a kind of smut, and be overrun and devoured by pismires, ordered their trunks to be white-washed with strong lime as high up as their branches, and lime-water (aq. calcis) to be sprinkled over their leaves. This had the desired effect; the insects were killed or driven away, and the trees, renewing their foliage, became strong and vigorous. 6. *On the virtues of the chiococca, David's root, or snow-berry-tree, by the Rev. John Richards, secretary of the society.* This we insert entire.

“As there are but few papers relative to the natural production of these islands, at this early period of the society's meeting, an account of the virtues of some of our wild plants will not be unacceptable to the society, or uninteresting to the community. I have known the chiococca to have very salutary effects in healing obstinate ulcers. The remedy was applied by a Mr. Patterson towards curing the ulcers on the face of an old woman of the name of Brown, then seventy years of age and upwards; she was a pauper on the parish, and had medical advice, but without effect. The ulcers were very disgusting to the sight, and had eat the flesh to the cheek bone; the wounds were continually running. I met Patterson one day, who said, Mrs. Brown was in a deplorable case; he could cure her with some roots if he were permitted. I said, I thought he could do no harm, as she was in a very low state, and all former applications had proved useless. In a week afterwards, I went to see Mrs. Brown; I found the ichorous matter had ceased running, and that her face was healing very fast, and at last the ulcers entirely dried up. I was surprised at the sudden and salutary effects of the application. I then entreated Patterson to tell me what he applied, which, after much solicitation, he did—with the proviso of not divulging it then, and said it was the root of a bush called the rat-root, whose virtues he became acquainted with from some Mosquitto Indians. He shewed me the tree, and upon examination, found it to be the chiococca, or snow-berry-tree. The shrub is of the class pentandria, order monogynia: the shrub is not above nine or ten feet high, the highest; its long and slender branches, if so high, are supported by other trees, or trail along the ground; the leaves are elliptical, resembling those of a myrtle, or a jessamine; the bark of the trunk of the tree is whitish, and the bark of the root emits a strong smell, and is of a bitter taste, resembling that of the seneka root. The corol is small and



white, with the edge divided into five segments, containing five stamina longer than the corol, with a very slender style, of the same length with the stamina. The spike bearing the flowers and berries resembles that of an English white currant. The berries are round, of a snowy colour, and about the size of a small currant. In October and November the tree is covered with berries, as with a covering of snow. It grows in the bottom, south of Fort Charlotte, and on the side of the New Road, before the wood was cut down. There are two kinds of it on these islands: the one at New-Providence is small, and round berried; and there is a larger one on Harbour Island, oblong berried. Dr. Brown thus speaks of the virtues of the plant in his natural history of Jamaica. 'I have known it administered with great success in obstinate rheumatisms, and old venereal taints, in the spina ventosa, commonly called Boneake. I have frequently observed the stubborn complaints eased, and sometimes removed, by the continued use of this, and a few mercurial alterants; but it is best used in decoction, which may be made stronger or weaker, as occasion requires.' The smaller the plant is, the more sharp and biting the root is. Patterson's method was to give a tea cup full of the decoction, and then bathe the ulcers with it.

"From these observations, we may conclude the virtues of this plant, worthy of further trial by medical people."

7. *On the cultivation of the Otaheite or asparagus bean, by the Rev. Mr. Richards.* The writer describes and recommends an excellent variety of the phaseolus, a native of the South Sea Islands, and well adapted to the Bahamas. 8. *On the gum arabic tree, by the same.* One of the mimosas, which afford this valuable gum, is growing thriftily at New-Providence. 9. *A letter from Mr. Alexander Anderson, superintendant of the botanical garden at St. Vincents, to Governor Dowdeswell; with an account of the exotic plants sent from the botanical garden in St. Vincents, to the Bahama Islands.* This we extract entire, as it affords an admirable example of the care taken by the British government to improve their colonies.

"About the end of the last year, I was requested by Sir Joseph Banks, to prepare a collection of the useful plants here, for your government. I have now the honour of sending them. I hope they will arrive safe, and prosper with you. The uncommon dry season in this island has very much retarded the increase of the young plants from the roots of the bread-fruit; consequently, a much smaller supply of them is sent than I intended. With difficulty have these been pre-

*Communications on different Subjects.*

served in the boxes for some months past. But I will always be happy in supplying your government with them, or any other production here, as good opportunities offer.

“All at present sent are valuable in commerce, medicine, food, æconomy, or as fruits. Should gentlemen in your islands wish for ornamental or curious plants, they will be gratified as soon as in my power.

“I think the oriental spices will thrive in your colony. From that idea, I have sent a large supply of cinnamon. The clove is a tender plant here, while young; probably it may be more hardy with you. I am sorry three plants are all at present I have in a state for transportation.

“As the product of the cochineal is a great desideratum in the British colonies, I have sent some plants of the cactus the insects chiefly exist on. In my opinion, the Bahamas are well adapted for that culture, and the best situated of any colony for obtaining the insect from the Spanish Main. That might probably be accomplished by some address and a little money, by the way of La Vera Cruz or the Bay of Honduras; and I think it is an object that merits the attention of the inhabitants of your government. I have the honour to be, &c.

*List of 466 plants, sent for the government of the Bahama Islands, of the following species, 53 in all: to wit,*

*Artocarpus incisus, Otaheite Bread Fruit.*  
*East-India ditto.*  
*Seed bearing ditto, Malabar Chesnut.*  
*Artocarpus integrifolius, Jack.*  
*Laurus Cinnamomum, True Cinnamon.*  
*Laurus Cassia, Cassia lignea.*  
*Caryophyllus aromaticus, Clove.*  
*Cycas circinalis, Sago.*  
*Mangifera Indica, Mango.*  
*Eugenia Malaccensis, Malacca Apple.*  
*Inocarpus edulis, Otaheite Chesnut.*  
*Jamboliseria pedunculata, Otaheite Plum.*  
*Aleurites triloba, Otaheite Walnut.*  
*Spondias dulcis, Otaheite Apple.*  
*Terminalia Catapa, St. Helena Almond.*  
*Copaifera officinalis, Balsam Capivi.*  
*Quassia amara, True Quassia.*  
*Mimosa Nilotica, Gum Arabic.*  
*Curcuma longa, Turmerick.*  
*Tecktona grandis, Tick Wood.*

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*Myristica Americana*, *Tobago Nutmeg*.  
*Thea viridis*, *Green Tea*.  
*Olea Europea*, *Olive*.  
*Carolinea Princeps*, *Tobago Bread-Nut*.  
*Aloe perfoliata*, *Succotrine Aloe*.  
*Cinchona cymosa*, *St. Lucia Bark*.  
*Maranta Arundinacea*, *Arrow-Root*.  
*Cordia dichotoma*, *Otaheite Yellow Dye*.  
*Sapindus edulis*, *Letchee, Chinese*.  
*Acca disticha*, *Gooseberry Tree*.  
*Averrhoa bilimbi*, *Cucumber Tree*.  
*Areca Catechu*, *Areca or Beetle-Nut*.  
*Quassia Simaruba*, *Simaruba*.  
*Epidendrum Vanilla*, *Vanilla*.  
*Convolvulus Batatas*, *Six Weeks Potatoe*.  
*Kæmpferia Galenga*, *Galengal*.  
*Otaheite Plantain*, *two kinds*.  
*Andropogon Schananthus*, *Lemon-Grass*.  
*Prunus Noyeau*, *Noyeau Plant*.  
*Bourbon Cotton*.  
*Dorstenia Contrayerva*.  
*Bignonia ophthalmica*, *Eye Vine*.  
*Ilex vumatori*, *Paraguay Tea*.  
*Justicia pectoralis*, *Garden Balsam*.  
*Asclepias asthmatica*, *East-India Ipecacuanha*.  
*Piper Nigrum*, *Black Pepper*, as yet doubtful.  
*Piper Betel*, *Betel Plant*.  
*Piper longum*, *Long Pepper*.  
*Cissampelos Pareira*, *Pareira brava, of the Brâsils*.  
*Cactus Cochinitifer*, *Cochineal Plant*.  
*Aristolochia odoratissima*, *West-India Snake-Root*.  
*Allamanda cathartica*.  
*Tacca Pinnatifida*, *Otaheite Potatoe, a Root*.

“ *Description, uses, &c. of the plants.* ”

“ The *Bread Fruit* grows fast to a large tree. In a good situation it will produce fruit in two years. It loves a free circulation of air, and should be planted at no less distance than sixty feet from any other tree, and nearly the same from one another. There are six varieties or kinds of it, differing in the leaves as in the fruit: The fruit also differs in size, from four to ten lbs. weight. It is fit for use when full grown, before it begins to ripen; in that state it is known from the skin turning of a brownish colour, with external concretions of the juice.



When ripe, it turns yellow and soft, to smell and taste sweet, by some esteemed as a fruit.

"The common and best mode of cooking it, is baking it entire as a loaf of bread, in an oven; or it may be sliced and toasted as bread without previous baking. Many like it boiled as a yam or potatoe; but, in short, it may be cooked as any esculent root. In a pudding it is excellent.

"The fruit has no seeds. Nature increases the plant by throwing up numerous plants from the roots, often at the distance of thirty or forty feet from the stem. They may be cut off when in height from six to twenty-four inches. Before that operation the part of the root cut off with the plant must have a few fibrous roots at it, the more the better; moist weather is the properest for doing it. After planting out of the plants, they should be sheltered a day or two with small branches of any thing that will keep the sun from them; all the large leaves ought to be cut off, as they immediately wither, and are apt to infect the stem. After they are rooted they are very hardy, and require no further attention unless defending them from cattle, as they are fond of the leaves and young tops. Rats are remarkably fond of them. When they arise to the height of ten or fifteen feet, care should be taken in clearing the ground around, not to destroy the buds on the roots which form the young plants. The roots destined by nature for their purpose, run horizontally on, or a little under the surface of the earth.

"The *East-India* kind was brought from Timor. It is a native of several parts of the East-Indies. Its habit is much the same as the former. The leaves are of a whiter colour, but the fruit differs much in size and shape. It is rough, the surface defaced, not of such a farinaceous substance as the *Otaheitean*, and at best a poor substitute for it. Like the former, it has no seeds, and like it, is increased by suckers.

"The *Seed-bearing* kind, or *Malabar Chesnut*, is also a native of the East-Indies and Ladrone Islands. It very much resembles the *Otaheite Bread-Fruit*, only its leaves are of a darker green and not so much cut, the branches more spreading. The fruit has prickles like the hedge-hog, and contains no esculent substance but seeds. They are nearly the size and shape of chesnuts, roasted or boiled, more farinaceous, and very nutritive. The negroes are very fond of them. This kind is propagated from its seeds only, as it throws up no suckers from the roots. The seeds vegetate in a few days, and must not be kept more than two or three days.

"The fourth kind, or *Jacca Tree*, differs very much in its habit and fruit from the three former. It is an elegant tree, grows rather slower than the Bread-Fruit. The fruit is much esteemed in the East-Indies. It grows to an enormous size, but rough and ill shaped, the largest as yet known frequently forty or fifty lbs. weight. The fleshy part is yellow, very sweet, but not relished by palates unaccustomed to it. The seeds resemble those of the Malabar Nut, and are equally good. Propagated only from seed.

"All the four thrive in various soils and situations, but loamy seems the most congenial.

"*Cinnamon*, two kinds. It thrives in any soil or situation, and is remarkably hardy. It is propagated by seeds, cuttings, and layers. In four or five years from seeds, the primary branches are fit for barking. The best time for this operation is when the sap is ascending. The bark acquires the greater part of its strength in dyeing.

"*Cassia Lignea*, as yet doubtful whether a distinct species from the cinnamon or not; however, that now sent under that name, very different from it. The leaves taste and smell much stronger of the cinnamon than those of the former, and in culinary purposes are a good substitute for the cinnamon. The bark has very little of the properties of the true cinnamon, except that from the trunk and larger branches. This kind is propagated from seeds only.

"The *Clove* here requires shelter from winds and rains when young till four or five feet high. There is a great probability of its thriving in the Bahamas, as it does not agree with much moisture. It may be increased by layers. The leaves are a good substitute for cloves.

"The *Sago* is the hardiest of plants, and will grow among rocks, but grows very slow. It increases itself by suckers from the bottom of the stem.

"The *Mango* thrives best in a moist situation, not exposed too much to the wind. Raised from seeds only.

"*Malacca Apple*, a beautiful, fast growing, little tree. The fruit cooling and pleasant. From seeds.

"*Otaheite Chesnut*, a small tree, likes a rich and rather stiff soil. The kernel of the fruit eats like the Windsor Bean. Raised from seeds.

"*Otaheite Plum*, an elegant fast growing tree. The fruit in clusters like grapes, and much esteemed. Requires a soil the same as the chesnut. It is propagated by seeds and layers,

" *Otaheite Walnut*, grows fast from seeds. The seeds used in Otaheite as a substitute for candles. Kernel esculent, as good as the walnut. It thrives in any soil or situation.

" *Otaheite Apple*, a large and fast growing tree, like the Hog-Plum, and produces very fine fruit in great abundance. It loves a good soil. Grows from cuttings and seeds.

" *St. Helena Almond*, grows very fast. Its branches extend horizontally a great distance, and form a fine shade. It thrives in any soil or situation. The kernel of the fruit small, but superior to the almond.

" The *Balsam Capiwi* grows to a large, elegant tree. From the old trees the balsam exudes at certain seasons of the year, but in small quantity. It is chiefly obtained by tapping. It loves a strong clay soil, but will grow in almost any. From seeds only.

" The *True Quassia*, a valuable medicine, a small and elegant tree, will grow in sandy or rocky situations. From seeds only.

" To the *Gum Arabic*, your soil and climate are congenial.

" *Turmerick* increases itself rapidly from the roots. A common garden soil the best. The roots are dry for use when the leaves decay, like the ginger. Increased by roots.

" The *Tick*, or East-India Oak, loves a strong clayey soil. It grows to a large tree. The most durable and hard of woods.

" *Tobago Nutmeg*, is a bastard species. The nut tastes a little of the spice, the mace less. The juice of the tree is used on the continent in medicine and œconomy. It is an elegant tree, loves a low moist soil. It is not impossible but it may be improved, and acquire more of the Aroma, by change of climate and soil. The plants should be planted not far from one another, as the male and female flowers are in different individuals.

" The *Tea Plant* will thrive with you, if a rather moist soil can be found for it. It is increased from cuttings. The plants now sent should be kept in the boxes in a shaded situation, and watered every evening in dry weather, until they have pushed young shoots from two to three inches long, when they may be planted.

" To the *Olive*, the climate and soil of the Bahamas must be congenial. To be treated as the tea.

" *Tobago Bread-Nut*, an elegant and fast growing tree, requires a moist soil; the seeds equal to an Irish potatoe. From seeds only.



"The *Aloe*, I should think, will be at home in the Bahamas, and may be rendered an useful production. It increases itself fast by suckers.

"The *St. Lucia Bark* requires a moist soil. It is a most beautiful tree, nor is there any doubt but its bark in many cases is superior to the Peruvian.

"*Arrow-Root*, very valuable; it increases fast by roots. Your islands probably are already full of it.

"*Otaheite Dye*, a handsome shrub, grows fast from seeds.

"*Sapindus* or *Letchee*, grows to a large tree, the fruit much esteemed by the Chinese, requires a rich soil. It propagates itself by suckers from the roots.

"*Gooseberry Tree*, grows fast. It is handsome, and yields an astonishing quantity of fruit; the fruit is excellent for tarts and for pickling. From seeds only. It thrives in any soil or situation.

"The *Cucumber Tree*, handsome, always in flower and fruit. The fruit sliced, with salt and pepper, not a bad succedaneum for cucumber; a strong, pleasant acid, makes an excellent pickle. From seeds. A garden soil best.

"The *Beetel*, or *Areca-Nut*, an East-India luxury, but a beautiful palm, grows fast, and will thrive in the Bahamas.

"*Simaraub*, a tolerable large tree; a rather moist soil and low situation best. By seeds only.

"The *Vanilla* must be planted at the root of a large spreading tree. The more moist the situation is the better. Readily increased by cuttings.

"The *Sweet Potatoe*. The best kind in these islands, very productive; any part of the stems grow. A light or sandy soil the best.

"The *Galengal* increases itself from the roots, like the Turmeric; any soil will do.

"The *Otaheitean Plantain* is superior to the common Plantain of these islands, requires a sheltered situation; the moister the soil the better.

"The *Lemon-Grass* will thrive remarkably well; well known in the Materia Medica as a medicine. Increased from slips.

"The *Bourbon Cotton*. The plant red, the cotton very fine.

"The *Contrayerva* delights in light sandy soil. Increased by slipping the roots.

"The *Eye Vine*, a climbing plant, should be planted at the roots of trees or sustained by poles. The juice of the cortical

part of the root, from two to three drops into the eyes, an effectual remedy in the most violent inflammation. From seeds.

"The *Paraguay Tea* will thrive in any common soil. Increased by suckers.

"*Garden Balsam*. Syrup or decoction sweetened, valuable in colds and coughs, and all complaints of the breast. The leaves bruised cure fresh wounds. Readily increased by slipping the roots.

"*East-India Ipecacuanha*, a climber, will require poles; the roots a medicine for asthma. From seeds and slipping the roots.

"*Black Pepper*, so far doubtful whether the true or not, must be planted at the roots of trees. From cuttings.

"The *Beetel Plant*, to be treated as the former.

"The *Long Pepper*, ditto.

"The *Pareira Brava* requires poles.

"*Cochineal Plant*. A leaf cut off and put on the ground grows. It is the receptacle and nourishment of the *Cochineal Insect*.

"The *West-India Snake-Root* is a valuable medicine, possessing nearly the same virtues as the *Virginian*. Increased by slipping the roots.

"*Allamanda*, is an elegant ever-flowering shrub; infusion of the leaves a cathartic; a moist soil the best. Increases by suckers.

"The roots of the *Otaheite Potatoe* resemble the common or *Irish Potatoe*. In *Otaheite* they reduce them to a farine or powder, before they are esculent; when boiled entire they are better. From roots.

"The *Noyeau Plant* is propagated by cuttings and seeds."

10. *Remarks on the trees and plants sent by Mr. Anderson, which are now alive and thriving in the Bahamas.* By this it appears that two kinds of bread-fruit, sago, mango, *Otaheite chesnut*, apple and walnut, *St Helena almond*, quassia bitter, *Tobago bread-nut*, arrow-root, gooseberry tree, cucumber tree, lemon-grass, true cinnamon, European olive, cochineal cactus, mimosa gum-arabic, black pepper, and some others have succeeded and are growing in the *Bahamas*.

From this favourable specimen of the society's labours, we augur a continuance and extension of them, and on a future occasion we shall feel much pleasure in relating their successful progress.

ART. IV. *Discurso sobre el Origen, Progresos, Metodos Curativos, y Demas Circunstancias relativas a la Enfermedad Maligna Contagiosa acaecida en la ciudad de Cadiz desde Principios de Agosto hasta fines de Octubre, Ano de 1800. Por un Apasionado a la Medicina; i. e. A Discourse on the Rise, Progress, Manner of Treating, and other Circumstances relative to the Malignant Contagious Sickness which happened in the City of Cadiz from the beginning of August to the end of October, of the Year 1800. By a Lover of Medicine. 12mo. pp. 47. Cadiz. Murguia.*

CADIZ has furnished a small publication, which we notice on account of its connection with the yellow fever in that city, which was described in Med. Rep. vol. v. p. 103.

After some introductory remarks, the writer of this little tract proceeds to give his opinion, that it was not a local or stationary epidemic (p. 13); that it began in the street called Sopranis, and spread far and wide from that place, as from a centre (p. 14); and "that positive facts prove that the sickness had nothing *stationary* [local] in its origin; but that some foreign morbid body, of an intensely active and contagious quality, produced, in this neighbourhood, the malignant, putrid, contagious calenture, which, as well by the rapidity of its career as by the gradation of the symptoms, allowed no time for the true professors of the art to correct the disorders which it produced." (p. 15). He confirms the account of the symptom of black-vomiting.

He then considers the dejection of mind, and the want of articles for food and clothing, the common attendants on sieges and blockades, as co-operating causes. He mentions the great rains which prevailed in January, and during the spring; and the strong easterly winds which continued during the whole summer. Notwithstanding all these coincidences, he still has recourse "to a morbid foreign body, of a prodigiously contagious power, which altered the natural constitution and state of health that the inhabitants enjoyed," &c.

From the tenor of the piece, we perceive that the writer, who, by the bye, conceals his name, combats the prevailing opinion, or "easy belief," in Cadiz, which is, that the distemper was local, and proceeded from changes wrought in the physical qualities of the atmosphere, and from the pas-



sions of the mind then prevailing among the inhabitants:\* and we regret that he has not been more usefully employed. His labours, however, are neither so long nor so dull as some of the contagionists in the United States. We hope, for the comfort of the Cadizians, he does not fatigue them so often.

But he does not pretend to explain how the spark of contagion was introduced. He has not a word of the tale about importation from the Havanna. In short, like the rest of the advocates of the same doctrine, he makes a very poor story of it. He affirms, however, one fact perfectly conformable to our own experience in America, that the people who were out of the city, and had not suffered the disease, were attacked, on their return to their houses, with such violence, that a large proportion of them were killed (p. 38). The rest of this short pamphlet we pass over as containing nothing particularly memorable.

ART. V. *Histoire des Chênes de l'Amerique, ou Descriptions et Figures de tous les Espèces et Variétés des Chênes de l'Amerique Septentrionale, Considerés sous les Rapports de la Botanique, de leur Culture et de leur Usage. Par André Michaux, Membre Associé de l'Institut National de France, de la Société d'Agriculture de Charleston, Caroline Meridionale, &c. that is, An History of the Oaks† of America, or Descriptions and Plates of all the Species and Varieties of Oaks in North-America, considered Botanically, Agriculturally and Economically. By Andrew Michaux, Member of the National Institute of France, of the Agricultural Society of Charleston, South Carolina, &c. &c. Large folio. Crapelet. Paris. 1801. With thirty six fine Copperplates.*

ONE of the establishments which gave splendour to the late monarchy of France, was that of botanical gardens in various parts of her colonies and of foreign countries. A piece

\* "Manifestado el que no aparecen razones convincentes para la creencia facil de que la calentura maligna, pútrida padecida fué estacional, ó proveniente de la alteracion de las qualidades sensibles del ayre, y pasiones de ánimo, solo queda el recurso de pasar á la investigacion de si fué originada de las qualidades insensibles de aquél, ó de algun otro principio no residente en aquellas," &c. &c.

† The North-American oaks had been partially described as long ago as 1771, by a careful observer: this was JOHN PHILIP DU ROI, who published his observations in two volumes octavo, at Brunswick in Germany.

of land, of moderate fertility and extent, hired or purchased by the government, served in the distant country where it was situated, as an home for a botanist, a repository for the seeds he might collect, and a nursery for the plants he should cultivate. Men of science are seldom avaricious: Devoted to nature, they have ordinarily but few acquired or artificial wants. A moderate provision contents them. A salary which would appear trifling and inadequate to the support of a luxurious person in fashionable life and in a great city, is amply sufficient for the sustenance and support of a student of natural history, devoted to the objects of his mission, and dwelling among forests, and plants, and trees, in rural simplicity.

It is almost incredible how much good may be done in this way by a government, at a very trifling or insignificant expense. The whole establishment of such a man would not require more for ten years, than a minister plenipotentiary, or an envoy extraordinary, consumes in one. And for this compensation, small as it is, the botanical missionary transmits to the country which employs him, the vegetable productions, seeds, seedlings, herbariums, and specimens of all kinds, from the region in which he resides; thus at once gratifying rational curiosity, and enriching his native land with the useful and valuable species of the remotest islands and provinces of the earth.

The superb and elegant work before us is one of the products of two botanical gardens and farms which the late King of France had provided, one in Bergen county, within eight or nine miles of the city of New-York; the other in South-Carolina. This resident and pensioner was the diligent and accurate MICHAUX, the author of this History of American Oaks. And while our native citizens are ignorant or incurious of the leafy tenants of their forests, the more enterprising and industrious sojourners from foreign countries discover, describe and arrange them, and teach us how to know and understand them.

It is matter of scientific gratification that this botanical institution was not ruined by the dissolution of the monarchy. Mr. Michaux did indeed return to France, with his collection of treasure, since the revolution began; but he was immediately employed by the government to accompany captain Bardin on a voyage to the South-Sea. And his report and collection of North-American productions were deemed so ample and complete, that Mr. CHAPTAL, the minister of the interior, has thought it no longer necessary to support these foreign institutions, as their main object has been fully answered and ob-

have sent forth, like all others, a descending root, without producing suckers; whence it seems probable there are no stoloniferous oaks.

“Oaks present numerous *varieties*, and the determination of the *species* to which they belong is attended with great difficulties. Frequently an intermediate variety appears so to approximate two species, that it is hard to determine, from an examination of the leaves, to which of the two species the variety ought to belong. Some species, apt to vary during their tender age, appear then so different, that the characters of the foliation are insufficient to determine and recognize the same species in young and old individuals. Several others, on the contrary, are so exactly uniform that the specific distinctions can only be established on the fructification, which is itself subject to exceptions and variations. It is only by comparative observations on individuals, considered both when grown and growing, that we can arrive at the distinction of the species that resemble each other so nearly, and at the distribution of the varieties to their proper species when found.

“The description of the oaks of North-America has been hitherto obscure, for several reasons: 1. The botanists who have visited those countries have given but detached observations upon those trees, and have not attended sufficiently to the characters of the fructification: 2. The authors who have treated on those subjects after them, have often united several species under the same denomination: and, 3. The figures they have given of American oaks, cultivated in Europe, are not always correct, because their growth there is retarded by a temperature, which is less favourable to them than their native land, and because they there preserve longer the varieties of foliation, which characterize their growing state.

“To clear up my doubts, I have planted and cultivated, during my residence in America, all the species which I have had opportunity to observe and collect; and after two years, I had the satisfaction to recognize all the varieties which had perplexed me so much when I traversed the woods.”

The species and varieties which Mr. Michaux describes are *twenty-nine*; and the arrangement of them he has made out in the following manner; to wit:

*Methodical Disposition of American Oaks.*

SECTION I.

*Quercus*, foliis adultæ plantæ muticis; fructu pedunculato; fructificatione annua:—Specie 6<sup>ta</sup> bienni.



Division I.

Foliis—lobatis.

- Sp. 1. Q. Obtusiloba—upland white-oak—iron-oak,  
 2. Q. Macrocarpa—over-cup—white-oak.  
 3. Q. Lyrata—water white-oak.  
 4. Q. Alba—var. *pinnatifida*. } White oaks.  
       ————— *repanda*. }

Division II.

Foliis—dentatis.

- Sp. 5. Q. Prinus—var. *palustris*—swamp chesnut-oak.  
       ————— *monticola*—mountain chesnut-oak—  
                     rock-oak.  
       ————— *acuminata*—narrow live chesnut-oak.  
       ————— *pumila*—Chinquapin-oak.  
       ————— *tomentosa*—Illinois-oak.

Division III.

Foliis—integris.

- Sp. 6. Quercus virens—live-oak of Carolina.

SECTION II.

Quercus, foliis adultæ plantæ setaceo-mucronatis; fructu subsessili; fructificatione bienni.

Division I.

Foliis—integris.

- Sp. 7. Q. Phellos—var. *sylvatica*—willow-oak.  
       ————— *maritima*—sea-willow-oak,  
       ————— *pumila*—dwarf-willow-oak.  
 Sp. 8. Q. Cinerea—upland willow-oak.  
 Sp. 9. Q. Imbricaria—shingle-willow-oak.  
 Sp. 10. Q. Laurifolia—swamp willow-oak.  
       ————— *obtusifolia*.

Division II.

Foliis—breviter lobatis.

- Sp. 11. Q. Aquatica—water-oak.  
 Sp. 12. Q. Nigra—black-oak.  
 Sp. 13. Q. Tinctoria—var. *angulosa*—great black-oak—  
                                     Champlain black-oak.  
       ————— *sinuosa*—quercitron-oak.  
 Sp. 14. Q. Triloba—Downy black-oak.

## Division III.

Foliis—profunde multifidis.

- Sp. 15. Q. Banisteri—running downy-oak.  
 Sp. 16. Q. Falcata—downy red-oak.  
 Sp. 17. Q. Catesbæi—sandy red-oak.  
 Sp. 18. Q. Coccinea—scarlet-oak.  
 Sp. 19. Q. Palustris—swamp red-oak.  
 Sp. 20. Q. Rubra—red-oak.

We have been the more particular to exhibit this systematic arrangement of the oaks, because we believe it will be welcome to our readers, and enable them the better to understand this difficult genus of plants. To the botanist this volume must be a rare treat: and the husbandman, and even the political economist, may peruse many of the descriptions with advantage. As a proof of this, we refer them to the account Mr. Michaux has given of the live-oak of the Southern States; a tree which, on account of the extraordinary durability and strength of its timber, is of unspeakable value to the country—though, alas! wastefully destroyed, and not protected as it ought to be by the proprietors, the States, or the nation.

Mr. Michaux recommends the cultivation of it on the sandy coasts of France, bordering on the Mediterranean Sea and the Atlantic Ocean.

ART. VI. *The Chemical Pocket-Book, or Memoranda Chemica, arranged in a Compendium of Chemistry, with Tables of Attractions, &c. calculated as well for the occasional Reference of the Professional Student, as to supply others with a general Knowledge of Chemistry. With the latest Discoveries.* By James Parkinson. To which is added, an Appendix, containing the principal Objections to the Antiphlogistic System of Chemistry. By James Woodhouse, M. D. Professor of Chemistry in the University of Pennsylvania, &c. With Copperplates. 12mo, pp. 215. Philadelphia. J. Humphreys. 1802.

BOOKS, it has been said, are multiplying so fast, that their number perplexes and bewilders the inquirer. On some subjects this is an inconvenience seriously felt and complained of. But chemistry has little cause, as yet, to lament the in-

crease of vain and useless volumes. A science whose principles are of such extensive use and application as this, admits of wide and various discussions. For it may be considered as less a science by itself, than an assemblage or cluster of sciences. This is so remarkably the case, that to chemistry belongs, more than to any other department of human knowledge, the epithet of "*scientia scientiarum*," the science of sciences.

Herein the progress of discovery is so rapid, that a frequent revision of what we have learned is necessary, that we may the more correctly adapt the new to the old. Besides the stock of facts which is thus daily accumulating, new language, new opinions, and new arrangements, are, from time to time, offered, both by the ingenious speculator and the sober interpreter of nature. These it is becoming and needful for the young student to become acquainted with immediately, and the more advanced one to add to his former acquirements as easily and as conveniently as he can.

From a perusal of the book before us, we have no reason to complain of the author for having compiled and published it. On the other hand, Mr. Parkinson has offered to his readers a handsome collection of "chemical memorandums," which the unlearned may peruse with instruction, and even the learned consult with pleasure. It seems to us likely that this manual of facts and doctrines was serviceable in Great-Britain, and we congratulate our scientific friends on its republication in America. Such a familiar, and, at the same time, comprehensive view of chemistry, must operate as a strong encouragement for the tyro to begin, and for the adept to continue his researches through this beautiful and boundless field of nature.

Mr. P. does not aim at novelty: his humbler, and, perhaps, more useful purpose, is to give a display of the present state of the science. With this intention, he has gathered from distant and respectable sources the most important information he could find. This he has extracted from the different essays, memoirs and tracts which he met with in reading, and has digested into short but perspicuous paragraphs. And, that he might deal fairly with his reader, he has very often quoted his authority for the information he presents. *Suum cuique tribuere* appears to have been the sentiment which governed Mr. P. while he was engaged in this performance; for he liberally ascribes to their proper authors a great proportion of what he has collected and arranged. His book, therefore,



answers the double purpose of an abridgement of the modern chemical doctrines, and an index where the materials at large are to be found.

The method which he has pursued differs considerably from that of the French table of the nomenclature. This is the more a matter of surprise, as he appears to be a decided antiphlogistian, or disciple of the Parisian school. After giving a definition of the science, and an explanation of attractions, he proceeds to treat of the "earths:" of these he enumerates *nine*; to wit, *lime*, *magnesia*, *alumine*, *silica*, *baryt*, *strontia*, *jargon*, *glucine*, and *augustine*. After these follow the doctrines concerning *caloric*, which we observe to be placed first in the catalogue. Then succeeds the history of *light*, *oxygen*, *hydrogen*, and *nitrogen*, with their modifications. On the two latter of these we remark, *en passant*, that it would be better to assume the term "*phlogiston*," for the base of inflammable air and of water at once; and that the retention of the uncouth and ill-devised word "*nitrogen*," which is infinitely worse than *azote*, will always exert a baneful and unhappy effect upon the science. Both "*hydrogen*" and "*nitrogen*" ought to be instantly discarded by all who understand the nice connection that exists between language and logic. And we predict that misconceptions and disputes will obscure and embitter these departments of chemistry until the phraseology is changed.

The three alkalies, *ammonia*, *pot-ash*, and *soda*, are next considered; and this prepares the way for an account of so many of the *neutral salts* as are formed by combination with the *nitrous* and *nitric* acids. Having given this, he treats of *sulphur* and its combinations, before and after oxygenation; of *carbone*, in its pure, oxydated, and acidified states, and of its junction with other bodies into *carbonates*; and of the *muriatic*, *boracic*, and *fluoric* acids, and their combinations.

*Metallic substances* follow: of the metals he reckons *twenty-one*; viz. *platina*, *gold*, *silver*, *quicksilver*, *copper*, *iron*, *lead*, *tin*, *zinc*, *antimony*, *bismuth*, *cobalt*, *nickel*, *manganese*, *uranite*, *tellurite*, *titanite*, *chrome*, *arsenic*, *molybdenite*, and *tungstenite*: and, connected with these, he treats of *Galvanic electricity*; and afterwards of the *bituminous* bodies, *petrol*, *mineral tar*, *asphaltum*, *amber*, &c. These observations are succeeded by remarks on *geology*, the *primeval state of the earth*, its *alterations in the course of time*, and on *volcanic productions*.

*Vegetable and animal substances* are treated of next, and,

under the former, *fourteen* acids are named; such as the *citric, malic, gallic, benzoic, tartarous, oxalic, camphoric, suberic, pyrotartarous, mucous, pyromucous, lignous, pyrolignous, and acetous*; and, under the latter, *nine* acids, the *lactic, saccholactic, sebacic, phosphoric, uric, prussic, bombic, zoonic, and formic*. Lastly, he has added Sir Torbern Bergman's tables of single elective attractions, as revised by Dr. G. Pearson, and commented on by the Reviewers; and Mr. Kirwan's tables of the proportions in which alkalies and earths are found to be united, and are capable of uniting with acids, and *vice versa*.

Notwithstanding the pleasing and sententious manner in which Mr. P. has executed his undertaking, there are some parts in which correctness of statement and pertinency of application seem to have failed him. As an example of this, we offer his remarks on animal putrefaction, which close the work.

"Every animal body, when deprived of life, suffers a gradual decomposition or resolution, which is effected chiefly by the access of air, aided by a due degree of moisture and of heat. Its colour first becomes pale; its consistence diminishes; its texture is relaxed; and a faint and disagreeable smell is emitted. The colour at this time changes to blue and green, the parts become more and more softened, the smell becomes *foetid*, and the colour of an obscure brown. The fibres now yield, the texture is more resolved, the putrid and nauseous smell is mixed with a smell of a more penetrating kind, arising from the disengagement of ammoniacal gas; after this the mass becomes of still less and less consistence, the smell more faint and nauseous, and the effluvia exceedingly active and injurious, arising, it has been said, from the separation of phosphorated and carbonated hydrogen gas; a separation of phosphoric light taking place at the same time. When it has continued in this state some time, the mass again swells up, and carbonic acid gas is separated: this part of the process is protracted for some time, when it changes into a soft putrid mass.

"A great part of the hydrogen, and the remaining carbon, with the other fixed radicals, now gradually form a dark, brown, soft, earthy matter. This result forms *soil*, which, mixed with *mould*, the remains of vegetable putrefaction, forms the common receptacle for the roots and germinating seeds of vegetables.

"When this resolution takes place at the same time with

vegetable matter, as in marshes, some portion of the hydrogen and phosphorus produce the *ignes fatui*, and such luminous appearances. If this resolution is accomplished in a confined place, a foul, *musty* smell is discoverable.

"Heat, moisture, and the access of air, should be avoided if it be intended to prevent this process from taking place. In one or other of these modes the various antiseptic processes act, such as covering with resins and balsams, drying, salting, and smoking, immersion in spirits, freezing water, &c."

This account has very much the air of having been copied from preceding writers. If it had been derived from Mr. P.'s *own* observation, we should have expected he would have mentioned the formation of the septic acid, the mischief caused by it when it rises in vapour, the fixation of it by pot-ash, and the conversion thereby to salt-petre. But he has only done as most others have done before him, the greater part of whom acknowledge that salt-petre derives its acid from putrefying substances, chiefly of the *animal* kind; and yet, through the most strange inadvertence, class this same sour offspring of animal corruption, when they obtain it under a new, mingled, and adulterated form, from salt-petre, by distillation, in a widely different part of natural and chemical history, and contend that it is a *mineral* acid. Mr. P. however, has conducted his description of the phenomena of putrefaction in a manner still more objectionable; for he has not vouchsafed to name the septic acid, or any of its effects or combinations. Such forgetfulness reminds us of the traveller who set out on a journey without adverting to the usefulness of money, and of the navigator that cast off from the wharf upon a voyage, and never thought of his anchors! For evidence on this head, we refer Mr. P. to Med. Rep. vol. iii. p. 307—310; to vol. v. p. 472; and to all the writers on the formation of salt-petre.

The agreeable and summary survey which Mr. P. has taken of these and numerous other subjects, recommends his work to the attention of those who wish either to acquire or to preserve chemical knowledge. And he who has a desire to make experiments will be further gratified by a print and description of the economical laboratory of Mr. Guyton, the experienced and able French chemist.

To this American edition, Professor Woodhouse has added a delineation and account of another economical apparatus invented by himself. The maker of experiments will find this to be simple, cheap, and applicable to a great variety of processes.



And the same editor has also enlarged it with an account of the principal objections to the antiphlogistic system of chemistry. The learned and ingenious Professor avows, that after attending to the subject in controversy for several years, he has been obliged to give up certain parts of the new theory as untenable, and he now states some striking objections to it, which he thinks have not been satisfactorily answered. These relate chiefly to the airs produced by transmitting the steam of water over charcoal exposed to a red heat, and to the gases obtained by exposing metallic calces and coal to a red heat. But as the curious experiments on these points have been published at large in our vol. iv. p. 115—119, we shall not transcribe them, but refer our readers to the original passages.

We wish Mr. P. had seen the different volumes of the Medical Repository. In one of these Dr. Woodhouse's experiments were published, as long ago as August, 1800. Should it ever be his lot to read these observations on his publication, we hope he will be encouraged to examine that American work, in which we can assure him there are a number of *other* "memorandums," which appear to us equally worthy of a place in his useful and convenient "Pocket-Book."

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ART. VII. *The Student's Chemical Pocket Companion.* By W. S. Jacobs, M. D. 12mo. pp. 114. Philadelphia. Conrad. 1802.

ANOTHER publication, of the same general scope and tendency with the one which has been considered in the former article, appeared in Philadelphia about the same time. A number of the observations offered on Mr. Parkinson's work as a guide and compendium of chemistry, apply to this performance of Dr. Jacobs; only it must be remarked that Dr. J.'s work is much shorter, less comprehensive, and destitute of the references with which Mr. Parkinson's abounds.

Dr. J. follows more nearly than Mr. Parkinson the established order of the nomenclature, though he also exercises considerable freedom in departing from that arrangement. In the rapid and broad survey he has taken of the subjects before him, he has attended more to the great outlines and divisions, than to matters of detail. To beginners it promises to be serviceable; though we recommend to the author the correction, in his second edition, of some errors which will

occur to him on revising the sheets of the first. He affirms, for example, that sulphur (p. 3), and the metals (p. 54), are simple substances, though, in their ordinary states, they are evidently connected with phlogiston (hydrogen). In p. 77 it is written, that "the sulphuric acid attacks manganese, and produces *hydrogen* gas;" when, surely, *oxygen* was meant. We question the explicitness of the statement given (p. 21) of Dr. Mitchill's idea of pestilential air. That gentleman never said that we know, nor does he now affirm (though it has been incessantly and mistakenly ascribed to him), that any modification of the *artificial* nitrous acid of the laboratories is the mischievous gas which poisons the atmosphere in times of endemic fevers, &c. but he is convinced, from a most extensive induction of facts, that an acid gas, *naturally* and spontaneously exhaling from certain corrupting bodies (which gas he therefore calls the *septic*), sometimes contaminates the atmosphere, and renders it unwholesome; and that alkalies are its natural and best antidotes. This *septic* acid, when associated with alkaline salts and earths, forms the class of neutral compounds, which he thence calls *septics*. When these are analyzed, or resolved into their constituent parts by *forcible* means, by high heat, and by addition of stronger acids, &c. the specific form of the *septic* is so far changed and lost, that it appears under the disguise and modification of the *nitrous* or *nitric*: and such appears to be the true and methodical view of the matter. We have so entire an opinion of Dr. J.'s candour and discernment, that we entertain no doubt of his being convinced, from this view of the subject, how improper it is to class the "nitric" among the *mineral* acids; an inadvertency against which Mr. Parkinson has guarded himself.

But we shall close our criticism on this well-directed work of an amiable and valuable member of the scientific corps, by extracting his account of animal putrefaction, that it may be read in connection with Mr. Parkinson's.

"For this process, air, heat and water are required. The animal substance first acquires a faint and disagreeable smell; its texture becomes relaxed; its colour changes to a blue, then green, and becomes softer, more foetid, and assumes a brown colour; next a putrid odour manifests itself, mixed with that of ammoniac. It loses its consistence; the carbonated phosphorated hydrogen, together with carbonic acid, are separated. It is now changed into a black foetid mass, which forms a good manure when mixed with mould.

“In the process of animal decomposition, the nitric acid is generated by the union of the oxygen of the atmosphere with a part of the nitrogen of the animal substance: while the hydrogen of the animal fluid, combining with another portion of the nitrogen, forms ammoniac, a portion of the oxygen unites with the carbon of the flesh, and forms the carbonic acid, which, with a part of the hydrogen, holding phosphorus in solution, are disengaged.”

It will appear evident that these two descriptions are, with little material alteration, copied from the same originals. To determine what authors Dr. J. and Mr. Parkinson followed, we turned to Fourcroy's *Leçon's Elementaires*, &c. and to Chaptal's *Elements*, &c. and found all the descriptions of the phenomena in these authors so nearly alike, that we suspect they are not the results of original observation in either of them, but have been transmitted by one from the other, or compiled by both from preceding writers.

How else could it have happened, that no single man of them all, since the days of Beccher, who examined for himself, had observed the *sour* stage of animal putrefaction? Our women know that meat, in common house-keeping, will grow acid in the pantry and larder. Our inspectors of beef for exportation to foreign markets can smell and taste the sourness of that sort of flesh as it corrupts. Our hunters and travellers through the wilderness are afraid to boil the salted pork they carry in their knapsacks, on long and distant expeditions, lest it should turn sour, and therefore eat it raw. And our very laundresses are well acquainted with the acid smell of human clothing which has imbibed much perspirable matter. And yet the philosophers and the chemists pass over these memorable facts as if they were unworthy of regard, or rather as if they did not know them. We want more original observers. It is admirable how many descriptions, when once they get into print, are copied, and imitated, and abridged, and paraphrased, and garbled, by writer after writer. In the account of these phenomena, Dr. J. has the advantage of Mr. Parkinson, by his mention of the septic (what he calls nitric) acid. He mentions both this and ammoniac as the products of the process; but why did not this gentleman say, with Fourcroy, speaking of the *infectious* and *poisonous* vapour exhaling from corrupting bodies, “that this odour is corrected, and, as it were, enchained by volatile alkali?” *Cette odeur est corrigée, et comme enchaînée par l'alkali volatil* (see *El. tom. ii. p. 839*); an expression full of truth and good sense.



ART. VIII. *Reports to Benjamin Stoddert, Secretary of the Navy, on the Subject of Docks; and Remarks relative to the Ports and Harbours of the Eastern States. By Joshua Humphreys. 8vo. Washington. Duane. 1802.*

THESE valuable papers form part of a series of documents concerning the naval affairs of the United States, and were published, together with a number of others, by order of the House of Representatives. They are the result of an examination of the ports of New-London, Newport, Providence, Boston, Charlestown, Portsmouth, Portland, and Wiscasset, made by order of government, for the purpose of ascertaining the best places for navy-yards, and places of safety and rendezvous for ships. Mr. Humphreys received his commission early in the year 1800, and his report is dated April 19 of that year. It lay in the office of the Secretary of the Navy until January 30, 1802, when it was put into the possession of the committee for naval affairs, who directed their chairman, Dr. Mitchill, to move for an order to print it.

Mr. H. has added much useful and valuable matter to the knowledge we possessed of the coasts and harbours of Connecticut, Rhode-Island, Massachusetts, New-Hampshire, and Maine. Our maritime geography may be considered as being substantially improved by the survey he has made. The advantages and disadvantages of each port and harbour that he visited, are stated in clear, sententious and perspicuous terms. And such persons as wish correct information concerning these parts of the Atlantic coast, will peruse the pieces now under consideration both with pleasure and instruction.

To give our readers an idea of this rare pamphlet, we shall offer them Mr. H.'s remarks on Newport, and contrast them with those he has made on Boston, showing the conveniences and inconveniences of both.

*“ Remarks at Newport.*

“ ADVANTAGES.

“ 1st. Accessible at all times, especially when the wind is at north-west; which is the prevailing wind in the winter season.

“ 2d. A good channel, depth of water, still tide, and a capacious harbour, well land-locked, sufficient for the largest navy in the world; a good anchorage above the Dumplin

Rocks, which is the proper place for ships to lay in; in fact, it is the best harbour for our navy I have seen.

" 3d. Goat-Island, a suitable place for docks, and belonging to the United States, well secured from storms by its situation; and the most suitable place for a dock is the west side of the wharf.

" 4th. Plenty of good materials for the docks.

" 5th. A good dock for docking of timber.

" 6th. Great advantage of being quick at or from sea, which may be in three hours.

" 7th. The number of vessels belonging and bound east and west of this port, frequently make it, and wait for a wind to waft them to their respective ports. This was the case while I was at this port, and is the most decided proof in favour of it.

" It appears, from the best information I could obtain, that the east end of Long-Island is a desirable part of the continent to make coming on this coast, and is the land most generally made, and that it is an object that commands the attention of all seamen returning to any port east of the Delaware. From the land so made, a north-west wind is a fair wind into this port; but unfair for any other, neither can they make any.

" DISADVANTAGES.

" 1st. The great expense to fortify this place, which may be estimated at more than one million of dollars.

" 2d. The small rise of tide.

" 3d. The probability of worms.

" 4th. The difficulty of anchoring below the Dumplin Rocks, the water being deep and the bottom rocky."

" *Remarks at Boston and Charlestown.*

" ADVANTAGES.

" 1st. The outer harbour of President and Nantasket Roads is large, and considered as a safe harbour for large fleets from the weather, when they are safe in and anchored.

" 2d. Quick at sea from this place.

" 3d. The inner harbour is very safe from the winds, freshes, and an enemy, and can be securely fortified at an easy expense.

" 4th. Boston and Charlestown, both being situated on necks of land, can be securely fortified, and without very great expense.

" 5th. The number of tradesmen within its vicinity, that may be commanded at all times in fitting and building ships of war.

" 6th. The number of seamen that resort to the port of Boston, which will always forward an expeditious equipment.

" 7th. The rise of tide, as it respects dry docks, which may be stated at eleven feet.

" 8th. The great number of militia that may be collected at a short notice, in case of an invasion, more than at any other place.

#### " DISADVANTAGES.

" 1st. The great fog that this coast is frequently subject to.

" 2d. The great number of shoals that are in and off the great bay, and the number of currents, which no experience can guard against.

" 3d. The difficulty of entering the harbour with the wind at north-west, which is ahead.

" 4th. The easterly winds, though fair for running in, are mostly attended with thick hazy weather; and the navigation of the bay being difficult, vessels are frequently compelled to stand out to sea.

" Mr. Mc'Lellan, an old, experienced commander on the coast, and a respectable citizen of Portland, states, that at, and all to the eastward of Cape-Cod, the coast is subject to great fogs, which sometimes continue for fifteen days. It is also stated, in a chart of George's Bank, by Paul Pinkham, that it is the most dangerous coast within the limits of the United States, and which he fears has been fatal to many.

" 5th. That a French seventy-four gun ship was absolutely lost in going out of the harbour during the revolutionary war, and a British seventy-four gun ship at Cape-Cod.

" 6th. The harbour opposite the town of Boston is not sufficiently large to contain a large fleet; the channel being very narrow, so much so, that there was but just room for the Constitution to swing clear of the ground at low water, in consequence of which Capt. Nicholson thought it most prudent to drop the ship down to President Road (which is just below the castle) to take in his stores.

" 7th. The anchorage is bad, from the bottom being very hard above Castle-Island, so much so, that Capt. Nicholson also states, he was drove up and down the harbour by the ice, with two anchors ahead, which would not hold: this hap-



pened some time since, though I suppose the ice cannot be so troublesome since the bridges are built.

" 8th. It is notorious that many vessels put into the Vineyard and Newport, and there wait a wind for Boston, which passage is considered as very dangerous. The difficulty of entering Nantasket Roads will be increased in crippled ships.

" 9th. It is stated that more vessels are lost in and near Boston Bay, than all the other parts of the coast of the United States.

" 10th. The fall of tide, as it respects shoals in the port or bay, as vessels may be affected by getting aground on hard bottom.

" 11th. To establish a navy-yard at Boston, the expense would be at least 48,000 dollars for the ground, and the place too much confined, and be very liable to be affected by fire; not only that, but you must lay your vessel in a northerly direction, subject to the cold northerly winds.

" 12th. Noddle's Island presents a westerly and north-westerly exposure, which is a very cold one, and the ground uneven. The most suitable piece of ground on this island, for a dock or navy yard, is said by the tenant to contain about 77 acres, upland and marsh. The owner demands 25,000 dollars for it.

" 13th. At Charlestown and Noddle's Island there are long flats.

" 14th. Charlestown is the most suitable spot in the port of Boston for a building yard."

After having described, after this manner, all the ports before mentioned, he concludes with these remarkable observations: (p. 40).

" Having compared and considered the advantages and disadvantages of situation, with capacity of harbour, depth of water, rise of tide, expense in building docks, prices of land, facility of navigation, and capability of defence, previously stated, at each port, I am decidedly of opinion, that Newport (Rhode-Island) is by far the most suitable port for the establishment of dry docks, and great naval port for our navy, for the ease and safety of entry at all seasons of the year. Its eligibility in preference to any other eastern port is universally acknowledged.

" The principal and only objection is the great expense of fortification, which may amount to more than a million of dollars.

" Boston harbour has been preferred by some; but experience has shown, that, during the late revolutionary war, a

French and an English seventy-four gun ship were both lost in Boston Bay, which are evident marks of its dangerous coasts and harbours. Neither money nor art can ever alter the winds, dispel the fogs, and remove the currents or shoals which are attached to Nantasket Road and coast. The amount of loss on those two ships would, I suppose, pay from one half to two thirds of the cost of fortifying Newport. Upon comparative accidents which have happened, and the causes still existing, it is fair to calculate upon what may take place in future. I am justified in this conclusion by the mode pursued by the underwriters, who calculate their premiums by the experience they have gained from what has passed; from which it is prudent and justifiable to calculate a continual loss equal to the cases stated, and in an increased proportion as our navy becomes more numerous.

"How different is Boston port compared with that of Rhode-Island, where you have no reason to calculate a single loss in a century!

"During the late war, the enemy, by taking possession of Rhode-Island, cut off the communication, in part, between the Eastern and Middle States. To guard against this in future, it may be doubted whether the navy and dock-yards will call for any important additional expense for fortification, further than for general defence, as there is no situation within the United States more convenient to favour the depredations of an enemy than Rhode-Island, nor from which our trade would be more liable to destruction from the excursions of their cruisers.

"The united interests of the States render this one of the most important ports for the attention of government.

"I cannot close this report without stating the propriety of fortifying the most suitable places for the protection of Gardiner's Bay, to prevent an enemy from taking possession of it."

Besides the kind of information, of which we have given these entire extracts, the report of Mr. H. abounds with facts and intelligence concerning distances, courses, depths of water, and directions for sailing, highly reputable to himself, and useful to the geographer and political economist. But, after having gone thus far, we must stop, and not transgress our critical limits.

ART. IX. *Naval Regulations, issued by command of the President of the United States of America, January 25, 1802.*  
12mo. pp. 36.

BY virtue of that power contained in the second section of the second article of the Constitution of the United States, which declares the President shall be commander in chief of the army and *navy*, and in addition to, and in conformity with the rules and regulations contained in an act for the government of the navy, passed March 2, 1799, this collection of private directions for the preservation of discipline, and the good of the service, seems to have been compiled. The eleventh section of that statute recognizes this right in a commander in chief or captain, provided the rules they adopt are not at variance with that law, nor with the maritime usages most common to our nation.

The contents of this work are digested into distinct heads, treating severally of the duties of a commander in chief, captain, lieutenant, sailing-master, surgeon, chaplain, boatswain, gunner, sail-maker, armourer, gun-smith, carpenter, master at arms, corporal, midshipman, and cook. To these short preceptive chapters are added regulations to be observed respecting provisions, slops, forms for keeping log-book and journal, court-martials and convoys.

The greater part of these matters falling not within our province, we content ourselves with merely mentioning them in general terms. But as numbers of our readers, especially of the younger class of medical gentlemen, may be desirous of knowing the duty of a navy-surgeon, we extract the part which refers to him entire.

*“Of the Duties of a Surgeon.*

“1. To inspect and take care of the necessaries sent on board for the use of the sick men; if not good he must acquaint the captain; and he must see that they are duly served out for the relief of the sick.

“2. To visit the men under his care twice a day, or oftener, if circumstances require it; he must see that his mates do their duty, so that none want due attendance and relief.

“3. In cases that are difficult, he is to advise with the surgeons of the squadron.

“4. To inform the captain daily of the state of his patients.



" 5. When the sick are ordered to the hospitals, he is to send with them to the surgeon an account of the time and manner of their being taken ill, and how they have been treated.

" 6. But none are to be sent to sick quarters, unless their distempers, or the number of the sick on board, are such that they cannot be taken due care of; and this the surgeon is to certify under his hand, before removal. If the surgeon of the hospital finds they might have been cured in a little time on board, the surgeon of the ship is to have charged against his wages, for every man so sent, ten dollars.

" 7. To be ready with his mates and assistants in an engagement, having all things at hand necessary for stopping of blood and dressing of wounds.

" 8. To keep a day-book of his practice, containing the names of his patients, their hurts, distempers, when taken ill, when recovered, removal, death, prescriptions, and method of treatment while under cure.

" 9. From the last book he is to form two journals, one containing his physical, and the other his chirurgical practice; which are to be sent to the navy-office at the end of every voyage.

" 10. Stores for the medical department are to be furnished upon his requisition, and he will be held responsible for the expenditure thereof.

" 11. He will keep a regular account of his receipts and expenditures of such stores, and transmit an account thereof to the accountant of the navy, at the end of every cruise."

We also insert the order concerning provisions that are about to putrefy on ship-board.

" In all cases where it may appear to the purser that provisions are damaged or spoiling, it will be his duty to apply to the commanding officer, who will direct a survey by three officers, one of whom, at least, to be commissioned."

We add the regulation for airing the hold.

" The decks or gratings are not to be scraped oftener than is necessary, but are to be washed and swabbed once a day, and air let into the hold as often as may be."

Among other marks of the sound sense and just consideration which dictated this manual of discipline, we remark that no fumigations are even mentioned. Vapours which deteriorate the air, without destroying any thing noxious which it contains, are most discreetly omitted. And such are the

fumigations now or heretofore in vogue among some of the European nations.

The President *guards against all manner of nastiness, and orders the men and the ship to be kept always thoroughly clean.* And this, we say, is "the law and the prophets" on this subject.

Our work has exhibited frequent instances of sad and ruinous sickness arising within the public ships and merchant vessels. (See Med. Repos. vol. iv. p. 1, 234, 244; and vol. v. p. 70, 234.) We are satisfied that the commander in chief has hit upon the sound and proper *general* precepts; and, under that conviction, we published the correspondence and supplementary rules *for details* of service, in our vol. v. p. 455, which are too fresh in the memory of our readers to need repetition.



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## MEDICAL & PHILOSOPHICAL NEWS.

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### DOMESTIC.

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*Law Case, where the Principle upon which the Action turns depends upon the Mode of preparing Pot-ash and Pearl-Ash from Wood-Ashes.*

*Vermont Supreme Court.—RYAN vs. TOUSEY.*

THE plaintiff is patentee under the act of Congress for the privilege of converting alkaline salts of the first crystallization, commonly called "black-salts," by one operation in a furnace duly constructed and heated, into *pot-ash or pearl-ash of the first quality*. He sold his patent right, for the States of Vermont and New-Hampshire, to the defendant, for a sum of money payable in several annual instalments. In the transfer, Ryan warranted to Tousey, that, by adopting his process, a large and specified quantity of pot-ash or pearl-ash could be manufactured, and that the salts so procured would undergo inspection, and be merchantable alkalies of the first rates. In proceeding to prepare the salts by the prescribed mode, Tousey found he could, indeed, prepare the *quantity* mentioned in the contract, but that they were remarkably deficient in *quality*. Both inspectors and manufacturers complained of them as faulty and bad; whereby Tousey was disappointed in his expectations, and the license which he had purchased became of no value to him. In the mean time an instalment growing due, Ryan commenced a suit against Tousey for the amount: to this the defendant pleaded, that he ought not to pay the money, inasmuch as the plaintiff had not fulfilled the second condition of the warranty, and therefore, in fact, he had received no valuable consideration, the pretended patent privilege conveyed to him being worth nothing. The defendant asked counsel, and received the following

*Opinion on this Mode of preparing Pot-Ash and Pearl-Ash from Wood-Ashes.*

The whole weight of the evidence on this process goes to prove that these kinds of salts do not pre-exist in the wood or



timber from which they are formed, but are produced during the act of burning, while the bodies of trees or other vegetable substances are converted to ashes. In order to procure them strong and good, the material of which they are formed should not be decayed or rotten, but sound and solid. Even then some sorts of vegetable substances yield a greater quantity and better quality of salts than others.

In the preparation, the manner of burning the wood is found to be of great consequence; for where the combustion has been conducted in a slow, imperfect, and mouldering way, the quantity and quality of the salts will vary from those obtained in a clear, brisk and strong fire.

Experience also has amply shown, that although these salts are the offspring of the fire, yet that fire may be so intense as to vitiate, and even destroy them. There can be no reasonable doubt that great quantities of the salts brought to market have suffered irreparable injury by having been exposed injudiciously to too long a continuance, and too high and unlimited a degree of heat.

Commercial men, and practical tradesmen, have, I think, more just ideas on these salts than the generality of men of science. Mr. POSTLETHWAITE,\* for example, in his Universal Dictionary of Trade and Commerce, is decidedly of opinion, that there are many kinds of pot-ash, which possess as many different qualities. Mr. MORTIMER,† in his cele-

\* *Extracts from Postlethwaite's Universal Dictionary of Trade and Commerce.*

He has no such article as "Alkali" or "Barilla." Under the title "Kali," in his first volume, he writes that *al*, in Arabic, signifies *salt*, and *kali* means *soude*, or soda; so that the word alkali is of the same import with *sal soda*, or salt of soda.

The greater part of the soda which comes from Spain is consumed at Paris and the neighbouring villages, by the scourers and whiteners, or bleachers, who use it to whiten their linen.

*Pot-Ash.* He thinks there are many kinds of it, which have as many different qualities. This is so much the case, that soda of Alicant is found to be best for making soap and bleaching, and that of Syria and Egypt for making glass.

† *Mercantile Opinions about Pot-Ash, from Mortimer's Dictionary of Trade and Commerce.*

*Article Nitre.* He mentions the idea of the nitre being, in part at least, if not wholly, a salt of animal, not of fossil origin, because it proceeds from the excrements of animals, and from the effluvia of the animals where-with old walls have become impregnated. He quotes Hoffman's assertion, that it may be procured at any time by exposing an alkaline salt to the atmosphere, in a proper situation, covered over-head from rains and dews.—Mortimer's book was published in 1766.

*Article Pot-Ash.* He makes a distinction between pot-ash and mere.

brated Dictionary of Trade and Commerce, expresses clearly the sentiment, that though these salts are produced in the fire, they are also capable of being destroyed by fire. And in the famous suit brought by the bleacher at Paisley against the merchant of Glasgow, consignee of the shipper in New-York, for damages, by reason of the bad quality of the salts sold him, judgment was given in the court of Glasgow for the plaintiff, though the ashes which were the subject in dispute were of the sort called "furnace ashes," and were sold under an inspector's brand.

I was formerly inclined to think, that the faulty quality of "furnace ashes" (for every discreet person with whom I have conversed about it admits it to be very faulty) was chiefly to be ascribed to the accidental or intentional admixture of foreign ingredients; such as clay, lime, iron, common salt, plaster of Paris, flint, and other things with which melted alkalies will combine. I have expressed this opinion both in conversation and writing; and this opinion all my subsequent observation has confirmed. I, however, have this additional sentiment to express, that, independent of all casual combinations and designing tricks, these salts may vary in quantity,

fixed alkaline salt. He affirms that pot-ash and pure fixed alkali are very different; and that the latter will not answer the purposes of the former in many of the manufactories. He has an idea that, during the exposure of pot-ash to the roasting or melting heat, it attracts some kind of acidity from the air.

*Article Alkali.* He affirms that vegetables which, if burned when sound, would have yielded alkaline salt, yield none at all when suffered to rot before they undergo the action of fire; says alkaline salts are as much the creatures of fire as glass is; that they are capable of decomposition; that they are by no means simple bodies, but are composed of different parts united together, which, when conjoined so as to appear homogeneous, owe their apparent simplicity entirely to the strength of the fire.

"Hence it also appears," says he, "that as these fixed alkaline salts are rendered more and more simple by a separation of their constituent parts, the salt that thus arises will be continually different; for that which remains after a separation of some of its principles, will always be of another and more simple nature; and, consequently, will have a different power of acting. Thus, in pot-ash which yields the best alkali, a considerable part of it is a bitter, hard, pellucid salt, which does not readily dissolve in water. If this be carefully separated from the rest, a pure alkali is obtained, fitter than the former, before this separation, for many operations which are performed by alkalies."

After mentioning adulterations, as with salt-petre and sea-salt, he adds, "that the very burning of vegetables, as it is performed in a different manner, will produce different salts; for it is a known truth, that if the same vegetable is burnt suddenly in a brisk, strong fire, it will yield a salt different from what is produced by burning it in a slow smothering fire."

and be defective in quality, from three causes: 1. The original constitution of the vegetable. 2. The manner in which it was burned to ashes. And, 3. The process by which these were converted to black salts, and these latter into pot-ash and pearl-ash: so that my strong conviction is, that even where no fraud is practised, and no adulterating material is added, both pot-ash and pearl-ash may be found wanting in those peculiar and active qualities for which manufacturers and tradesmen employ them. In such cases the cause of the mischief appears to be excessive heat. The salts, if I may use the expression, are burned to death.

In the case depending between Ryan and Tousey there has been an apparent deception on both sides. The patentee and the assignee seem not originally to have been aware of the destructibility of these salts by intense violence of fire. The process of the former, while it produces a large quantity, ruins its quality. The latter having purchased the license with a warranty, that, by following the specified mode, he should manufacture salts of the first quality, has been deceived and disappointed by reason of the patentee's having promised what it was impossible for him to fulfil or perform. For by this process it is impossible to produce the articles of those prime and first-rate properties. Upon what principle, then, can Tousey be compelled to pay a solid compensation for the nullity or impossibility warranted by Ryan?

SAMUEL L. MITCHILL.

East-Rutger's-street, June 20, 1802.

SHIPS THE MANUFACTORIES AND VEHICLES OF PESTILENCE.

In our vol. v. p. 70 and 234, the facts were detailed concerning the *importation* (as the contagionists call it) of a destructive sickness repeatedly into New-York, from several ports in Ireland. The American cities have suffered more calamitous visitations from that country than from all the West-India Islands put together. And, according to the contagious doctrine entertained and propagated by some Hibernian gentlemen of the medical profession, whose published opinions we have read, Ireland ought to be considered, in every American sea-port, much more productive and abundant of contagion than any region on the globe.

But there is no need of affirming the contagiousness of fevers, or their importation either from Ireland or the West-Indies. It is sufficiently understood, that poison is engendered



*in such ships* from Ireland as those alluded to above, and in a greater part of those returning in a state of horrible nastiness from the West-Indies; and that this *inbred mischief* has no reference to any particular city, port or country which that ship may have visited. Bred in the ship, and belonging to her, and *locally* appertaining to her, the poison is carried along wherever she goes. Such a ship is a direful nuisance; and yet such nuisances are very common. And, by a most unhappy mistake, the *pestilence manufactured and inherent in the ship*, and transported within her to whatever place she may be destined, is ever deemed to have been taken on board at the place she last left; when, in fact, that place has nothing to do in the business.

To candid examiners, the fact now to be related conveys deep insight into this matter. One of the before-mentioned pestilential ships from Ireland, too nasty and too poisonous to be suffered to approach the city of New-York, was detained at the quarantine station near Staten-Island. After the survivors of the wretched passengers and crew had been landed, and the decks washed a little, the owner of the ship made application to the health-officer for a permit to take her up to the city. This the health-officer resolutely refused, alledging that she was too foul and pestilential to go any where, and that she must remain where she was, and be scrubbed and scoured out.

The owner grew angry at this, on account of the *expense* and *delay* requisite for cleaning the ship properly, and peremptorily demanded her release. To this the health-officer replied, that she should never go to that city in her present state of impurity, and told the owner to strike the yellow flag in her shrouds at his peril.

Finding that he could not succeed in this way, the owner gave up all thoughts of freighting the ship at New-York. He then asked the health-officer whether, by the laws of the State or nation, he might send his ship in her present condition to sea. Being answered that there was no legal impediment to that, and that he might send her to Tartarus if he pleased, a new voyage was agreed upon, a clearance obtained from the Custom-House, and orders given to the master to carry her to Baltimore to receive a cargo!

This is an example of the manner in which pestilence, engendered on ship-board, is carried from one port to another. And while the contagionists of New-York are railing at the people of Londonderry, and the citizens of Baltimore reviling

the New-Yorkers, they forget that neither of their cities is to blame, but the true cause of grievance and mischief is in the nasty ship.

INTERESTING PARTICULARS CONCERNING THE CHANGES  
WHICH THE HUMAN BODY UNDERGOES IN THE GRAVE.

In the neighbourhood of the city of New-York, a little to the eastward, and on the Long-Island side of the river, is a cove called the Wallabough. In this recess were stationed the prison-ships on board of which the American seamen and other captives were confined, during the revolutionary war, by the British. A large proportion of the most vigorous young men belonging to Newport, Nantucket, and other ports in the Eastern States, were taken on the high seas, when engaged in lawful navigation and commerce, and brought into New-York, then the general rendezvous of the British fleets and armies. Regular and prompt exchanges of prisoners not being practicable, these unhappy Americans were confined in the hulks provided for their reception near the shore of Long-Island. Here they endured hunger, thirst, personal abuse, and severity from their keepers, to a degree rarely equalled in the history of modern cruelty. To starving, and denial of almost every necessary of life, were soon added the ravages of pestilence, engendered from uncleanness on board. And, by the operation of these causes in conjunction, were fifteen thousand of the most active and industrious citizens of the United States destroyed between the years 1776 and 1783.

The bodies of these revolutionary victims were buried on the adjacent shore. The spot in which they were interred was then private property. It has since been purchased for the use of the government, and converted into a navy-yard. In digging down the banks to fill up the water below, and form wharves and building scites for ships, this great burial ground has been broken up.

The soil is a sharp silicious grit, containing but a small commixture of clay. It is stratified, and bears evident marks of having been formerly disposed by water; and marine shells are found among it. The strata are not exactly horizontal, but dip a little, and are interspersed with water-worn stones of various sizes, lessening from that of an hen's egg. From the shore the land rises, with a steep ascent, to a height of about 35 or 40 feet. At the bottom of this bank, along its slope, and in the level of an orchard above, the persons charged with the burial of the dead deposited the remains of these

miserable American captives. They began at the shore, as nearest and least troublesome; and, as they filled the ground with carcases, proceeded further and further inland. The bodies were generally interred one by one, and without coffins.

Reckoning from 1780 to the present period, is twenty-two years. During that time the fleshy parts were all decayed, and somewhat of a soft and dark-coloured mould remains around the skeletons. Of the bones, the skulls, back-bones, hip-bones, shoulder-blades, arms, legs and thighs, are variously decayed, though in some they remain tolerably entire. And it is remarkable that those which were buried near the salt water were less decayed than those in the sandy soil above. On examining the skulls, when on a visit to the navy-yard, Dr. Mitchill was inclined to believe, from the openness of the sutures, and the smoothness of the bones, that the greater part of them were *young* men. By the care of Mr. John Jackson, these afflicting remains are collected into boxes, and re-interred in a place where they are not likely to be disturbed again. With a spirit which does honour to his manly and patriotic feelings, this gentleman intends to set on foot a subscription for erecting a monument over them, with a suitable inscription, to commemorate their hard and untimely fate.

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DR. LIONEL CHALMERS ON THE ACIDITY PREVALENT IN  
THE ATMOSPHERE OF SOUTH-CAROLINA.

This philosophical physician published "An Account of the Weather and Diseases of South-Carolina," in two volumes, at London, during the year 1776. Prefixed to this work is a *sketch of the climate, water and soil*, of the region which he describes. In this he notices the flatness of the country near the Atlantic, and the depth of rich mould formed from decayed *animal and vegetable substances*, reaching in some places twenty feet deep; how this is frequently overflowed for rice-fields; and what numberless shoals and swarms of *insects* and *craw-fishes* afterwards die, and mingle their remains with the soil. (p. 2, 3). He mentions the nauseous vapours arising from these things, and from the marshes and corrupting *shell-fish* which have been accumulating for ages. (p. 5). Notice is taken of the putrid exhalations of the multitudes of *fishes* and *reptiles* that taint the air after the expenditure of the water in the indigo reservoirs. (p. 6). *Reptiles, insects*, and their *ova* or *spawn*, are mentioned as abounding in multitudes. "From the surfaces, therefore," he writes, "of so many large rivers, and numerous collections of standing wa-



ters—such quantities of sunk, fenny and marshy lands—it may readily be inferred that excessive exhalations must be made in this sultry climate:” whence rains, fogs and dews are copious. (p. 8).

These exhalations do not consist of simply aqueous particles; they partake of the qualities of the substances emitted from the subjacent and surrounding bodies. One of the most predominant of these is an ACID, or some other *saline* principle. The proofs of which acidity in the atmosphere are, the speedy rusting of polished metals, and *the remarkable fading of such dyed stuffs* as require acids to fix or heighten their colours. “For these strongly attracting this salt from the air, &c.” (p. 11), Chalmers has an instructive chapter (vol. i. p. 87) on the acidity present in the *essera* or rash, connected with the paroxysms of intermittent fevers; and of the good done by giving magnesia, crab’s-eyes and alkalies to cure it.

#### GALVANISM IN THE CURE OF DISEASES.

It is matter of pleasure and congratulation to the friends of science and of the healing art, that the numerous experiments on Galvanism are likely to terminate in something useful. Deafness, in particular, has been not only relieved, but cured by it. Most of the experiments that we have hitherto heard of, have been made in Germany. In Hamburgh, two gentlemen of distinction have been so far relieved of hardness of hearing, that both are resolved to give the remedy a fair and ample trial. The pile or battery, in one of these instances, consisted of from 25 to 30 plates, made of zinc and type-founder’s metal. In the other, after blisters had been applied to the skin over the mastoid processes, a plate of zinc was applied to the blistered part behind one ear, and a copper-plate behind the other, and the connection made by a wire. At Eutin, in Holstein, some have been cured of hardness of hearing, and some of total deafness. At Yever, near Oldenburgh, it is said that thirteen have been cured, most of whom were dumb as well as deaf. Other similar cures have been performed at Ratisbon and Brunswick. It is related that the columns, piles or batteries were, in some of the instances, so powerful in their action as to make the patients faint away, or to benumb and stun them for a while.

In addition to these remarkable facts, it is alledged that these strong Galvanic plates have cured blindness, lameness, and various kinds of atony and muscular weakness.

Besides this information, we have just received a book of

256 pages, published last year at Berlin, containing a collection of Galvanic experiments, and their application to medical purposes. The title of the work is, *Versuche den Galvanismus zur Heilung einiger Krankheiten, Anzuwenden; angestellt und beschreiben* van C. J. C. Grapengiesser, *der Arzneikunde und Wundarzneikunst Doctor: i. e. Experiments on the Application of Galvanism to the Cure of certain Diseases; devised and described by C. J. C. Grapengiesser, Doctor of Medicine and Surgery.* He treats of its utility in the following diseases, to wit: 1. Lameness of the extremities. 2. Dimness of sight and gutta serena. 3. Hardness of hearing and deafness. 4. Relaxation of the sphincters of the intestinum rectum and bladder. 5. Apparent death. 6. Hoarseness and loss of voice. 7. Some kinds and degrees of chronic rheumatism. 8. The sciatica, or hip-gout. With directions for applying it in all these cases.—At the end of the book are plates, representing the mode of applying the Galvanic influence to the ears and head, in cases of deafness, by a well-contrived apparatus; and the mode of applying it to parts that have been blistered by cantharides.

From Dr. Albers, of Bremen, Dr. Miller has lately received an interesting work on Galvanism, entitled, "*Commentatio de Usu Galvanismi in Arte Medica, speciatim vero in Morbis Nervorum Paralyticis,*" by Dr. Bischoff; published at Jena in the last year. This work exhibits a history of the discovery and progress of Galvanism; a description of the pile of Volta, with an account of the construction and use of it; and a narrative of some experiments, and of the effects of Galvanism in paralytic and other diseases. Two cases of the efficacy of this remedy in amaurosis are related by this author; in some cases of palsy it was also completely successful. In two cases of epilepsy the force and frequency of the paroxysms were much mitigated; and in deafness great advantages have arisen from the application of it.

Dr. Bischoff has invented a mode of combining the powers of two of Volta's piles, for medical purposes, so as greatly to increase the force of the remedy. A plate, exhibiting the manner of using the two piles together, is annexed to the pamphlet.

#### ANALYSIS OF AN ARTHRITIC CONCRETION.

M. Carendeffez writes to the editors thus, June 30th, 1801. "Professor Mitchill having requested me to examine a piece of a gouty chalk-stone which was obtained by himself from a man who had suffered many years severe pains of gout, and

which weighed thirteen grains, I proceeded in the following manner:

"Having reduced the concretion to a gross powder, I poured on it a very limpid solution of caustic pot-ash. A decomposition of the concretion took place, and the liquor appeared of a milky whiteness. After leaving them in mixture long enough to complete their action upon each other, a whitish powder fell to the bottom, and the liquid above became clear. On examining the sediment closely, it was found to contain small films or membranes, and a proportion of gelatin. The gelatin, by mixture with sulphuric acid, became yellow and glutinous. The clear liquid was then poured off, and the precipitate washed carefully with water. The whole was next filtered. On evaporating the filtered fluid, I found it to contain the *urate of pot-ash*, having crystals of a double base, agglutinated, and terminating in two long and obtuse points.

"On tasting this new compound, I found it to possess an urinous, putrid and animal flavour, biting the tongue like pepper.

"To be certain that the fluid now was neither acid nor alkaline, I dipped litmus-paper into it, which gave no sign either of acidity or of alkalinity; so that the liquor was perfectly neutral.

"To the earthy residuum left on the filter I added a little sulphuric acid. A slight effervescence took place. I then poured on some water, and, on adding lime-water to this, the liquor became turbid, and a *phosphate of lime* was formed.

"I hence conclude that this arthritic concretion is a chemical compound of the *phosphoric acid and lime, connected with the uric acid in a free state*, and with a gelatinous substance which pot-ash attacks and easily dissolves." But on this curious subject further experiments ought to be made; and, by persevering in such trials, an obscure part of pathology will probably, at length, be rendered clear and plain.

#### A SAVING OF FUEL AND TIME IN CALCINING LIME-STONE.

Peter Lossing, of Beekman-Town, in Dutchess County, has obtained a patent (dated August, 1800) for an improved method of converting lime-stone to quick-lime. The principal advantages of his method are these: 1. The fire-place which receives the fuel, instead of being left open, as in the common kilns, is closed after the wood is put in. 2. The heat is



thus prevented from escaping through the aperture to incommode the workmen. 3. By preventing its dissipation in this manner, the heat is made to ascend through the crude lime-stone piled in the kiln, and to expend its force wholly upon the material to be calcined. 4. A saving is made of a considerable proportion of the wood usually employed in calcining lime-stone; amounting to one half of the quantity commonly consumed by the old lime-burners in the State of New-York. 5. The air, instead of being admitted through an opening in front of the kiln, as in the old mode, is made to ascend through an opening in the ash-hole, formed in an angular direction, coming in at the mouth, and thence through gratings to the fuel above. 6. The quick-lime, so prepared by a rapid and intense heat, is better adapted for building, and preferable for the use of bricklayers and masons. 7. A kiln, containing 1500 bushels of slaked lime, may be completely burned in 48 hours; whereas, in the old mode, at least double that time is required. 8. In this process so little coal or ashes fall into the pit through the grating, that, in the consumption of ten cords of wood, not more than four or five bushels of ashes are formed; the rest of the residuary mass of the wood, in this intense heat, being dissipated, decomposed, and carried off in vapour. 9. A common kiln may be fitted to work upon this plan for the expense of a dollar, exclusive of the doors, and with not more than three hours labour.

Persons who wish to adopt the above mode of calcining lime-stone, are requested to obtain particular directions from the patentee; for, a want of a strict adherence to the principles on which it is designed to operate may bring this useful discovery into disrepute.

Mr. Lossing has improved the art of burning lime in many respects; and his observations tend to show that quick-lime is something very different from mere calcareous earth deprived of its carbonic acid and water. From the quantity of alkaline salt collected at the top of his kiln after cooling, there is reason to believe the convertibility of lime into pot-ash.

#### ANIMAL ORIGIN OF WHAT IS CALLED "NITROUS" ACID.

A sensible English traveller (Townsend's Journey in Spain, vol. iii. p. 91) has given an account of the salt-petre works in Grenada, and agrees with the idea of the formation of nitrous acid by the combination of the base furnished by animal putrefaction with the vital air afforded by vegetables; observ-

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ing, at the same time, that *animal substances*, simply by *putrefaction*, afford *nitrous air* also.

Salt-petre, says Gellert (*Metallurgic Chemistry*, p. 69), as far as may be judged hitherto from experience, is generated *only on the surface of the earth*, where putrefying substances abound; and if any be found in some springs and waters, it is probably owing to its having been only washed out of soils containing salt-petre, and carried downward by rains. Most earths, especially the loamy and calcareous species, are very proper for the generation of nitre, &c.

#### A ROYAL REMEDY FOR FEVERS.

In 1785 a mortal fever raged at Carthagena, in Spain, and the government extended its care so far as to order a particular prescription (*a composition of sal absynth. sal ammoniac. tart. emet. et cort. Peruv.*), and no other, to be employed by the physicians. The physicians remonstrated against it; the court threatened imprisonment if they deviated, and the people continued to die. At length the physicians were allowed to prescribe as they pleased in their private practice, but were compelled to employ the court prescription in all the royal hospitals. (Townsend, vol. iii. p. 141.)

#### DIFFICULTIES IN DETERMINING WHAT IS "THE PLAGUE."

The plague at present signifies any mortal sickness, making, now and then, great destruction of the human species in Asia, whence the Europeans have persuaded themselves they always imported it. How far the opinion of its being caused by a *specific* or *peculiar* contagion deserves countenance, may be judged of from Mr. De Croessantes's account of the visitation of Marseilles in 1720 (*Gentleman's Magazine*, vol. xxiv. p. 32), where the men who died between Sidon and Leghorn, on board the vessel which brought it, were reported by the physicians as having died only of *malignant fevers*; and, after its introduction into the place, the physicians and surgeons appointed to examine the sick, concurred in a report that it was *not a plague*, but some said it was a *malignant* fever, some that it was a *contagious* fever, and others that it was a *pestilential* fever. Where is the difference? Probably *yellow fever* would have answered just as well.

#### REMARKABLE FACTS CONCERNING PESTILENTIAL DISTEMPERS.

"The institution of great cities," says Gibbon (*Decline and Fall of the Roman Empire*, vol. vii. p. 398), "which  
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include a nation within the limits of a wall, almost realizes the wish of Caligula, that the Roman people had but one neck." How far the plague which raged in the reign of Justinian, and began in the 542d year of the Christian Æra, was owing to vapours emitted from the earthquakes which overwhelmed the cities of Berytus and Antioch, convulsed all the Roman Empire, and agitated the surface of the whole earth, is an undecided question. It is certain that such a wide-spreading pestilence, invading so large a part of Africa, Asia and Europe, and raging for fifty-two years, must have arisen from some uncommon cause. The pestilential influence of the southern climates upon the barbarians of the north may be judged of by the entire armies of them which were swept off by sickness in the expeditions to Italy. They had a superstitious desire of having their bones interred in their own country. They contemplated the probability of death; and the survivors were charged with the task of boiling out the bones of the princes and nobles, and carrying them back. A cauldron for that purpose was a necessary piece of travelling furniture; and a German, who was using it for his brother, promised it to a friend after it should be employed for himself. (Gibbon, vol. ix. p. 177).

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SEPTIC OR PESTILENTIAL GAS NOT ALWAYS DECOMPOSED  
BY COLD.

It has been confidently asserted by some, that coldness of atmosphere would stop the operation of febrile poison, and that as soon as the ice was formed by the natural abatement of heat in autumn, the ingredients of this compound would be disjoined. This should be understood with some limitation. Fluidity, or a tendency thereto, is necessary to the chemical operation of bodies, and putrefaction cannot go on without it. The formation of ice, then, by retarding or stopping putrefaction and the action of the intestine particles of matter upon each other, will most certainly prevent the further production and extrication of gas in the open atmosphere. But will it decompose the poison formed in houses or ships? It would be happy for mankind if this was the fact. It appears, however, the truth is otherwise. Lind declares, that on the 12th of December, although the weather was *extremely cold, with an intense hard frost, which had continued many days, the* nasty and infected ships in Portsmouth harbour continued daily to send patients into Haslar-Hospital, ill of yellow and spotted fevers, some of whom were besprinkled with numerous petechiæ. The arrival of the Diana frigate, near Christmas,



from North-America, at Portsmouth, in a sickly condition, looks as if septic poison, produced from nastiness in a ship's hold, was not so easily subdued by cold. Malignant fevers were, in this case, generated among a crew, within a few weeks before the vessel reached the coast of England, during a voyage in winter from North-America to Great-Britain!—The same thing happened to the *St. George*, another ship which sailed from Spithead in February, 1760, with a healthy crew, and returned, after meeting with bad weather, in an unhealthy plight. In this, as well as in the former instance, the distemper, so far from being stopped, did break out and make its first appearance during an intense cold season, and was of a malignant nature. (Lind on Seamen, p. 209). He observes that the *severest frost* did not mitigate the force of the poison in the ship *Neptune* (p. 226), and for a very good reason; the frost did not reach and refrigerate the whole inside of the ship.—We are apt to turn our eyes southward whenever infection is talked of. Hot climates are not the only agents in producing infection. The same author relates (p. 188), that after the declaration of war by Great-Britain against France, in 1756, the *greatest number* of patients in the Marine Infirmary near Portsmouth, and those who were afflicted with fevers of *the worst kind*, came from *North-America*, particularly from Quebec, and from St. John's in Newfoundland. And in 1757, the plague which raged in Brest in France, *all winter*, from November to April, 1758, and destroyed more than ten thousand lives, among whom were five physicians, one hundred and fifty surgeons, and two hundred almoners and nurses, was engendered in the fleet, commanded by M. De la Mothe, that returned from the relief of Louisbourg. The plain reason was, these vessels were the most crowded, nasty, and, therefore, pestilential. Our distinction between typhous and yellow fever (see our vol. v. p. 202 & seq.) will explain these facts.

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*Air-Pump-Ventilator, for the ventilating of Ships, Mines, Prisons, Hospitals, &c. invented by Richard Robotham, of the City of Hudson (N. Y.)*

The following are the words of the patentee:—It is a single bellows, fitted upon the top of a tube of wood, or a trunk made of plank, which, in a ship, stands in the lowest part of the hold, by the keelson, and runs up through the lower deck. The bellows is fixed on the top of this trunk, with a valve in the usual place, at the inlet. The outlet of the bellows is made of wood, with a square angle, which turns upwards,

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and a valve in the upright part, that shuts down, in such manner that the bellows fills from the bottom and discharges at the top. If the bellows discharges one barrel at a time, the insides of the trunks must be six inches square; it will be then sufficient for a vessel of three hundred tons; but if they are four or five times this size, the machine may be worked by the labour of one man: or, about one square inch of enlargement may be made in the trunks to each gallon in the bellows: then it will fill and discharge about twenty times in a minute. The bellows may be made in various shapes and sizes at pleasure. This improvement consists altogether in filling the bellows at, or from the bottom, and discharging the contents at the top, above the upper deck, or out of a port-hole.

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#### INFLUENZA.

An epidemic catarrh has been prevailing more or less in most, and, probably, if accurate information could be obtained, in all parts of the United States, at some period between the latter part of last June and the middle of August. This disease, in general, has appeared under a mild form. Besides the usual catarrhal symptoms, it often attacked the throat, ears, jaws, teeth, and all the neighbouring parts, producing pains, swellings, and frequently abscesses of a troublesome and obstinate kind. Many were affected with pains in the breast, sides, back, and limbs; but the febrile symptoms were commonly moderate. In the city of New-York this epidemic was discovered in the last days of June and the beginning of July, and continued to prevail more or less till the middle of August. We have received notices of it from different parts of the Eastern States, from high northern situations, from the city of Philadelphia, and as far to the southward as South-Carolina. In the minds of many persons, this epidemic excited, and not without reason, apprehensions of the prevalence of malignant diseases in the latter part of the summer and through the autumn.

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#### YELLOW FEVER.

The return of this malignant disease has renewed the alarm which unhappily has too often occurred at this season, in several cities of the United States. Philadelphia was the first to experience the visitation of this pestilence. Soon afterwards it appeared at Baltimore; and, still later, at Portsmouth in New-Hampshire. In some parts of the interior country, especially in the neighbourhood of morasses, swamps, and other low ground, we have also heard of its appearance and fatal effects.

In all the instances just mentioned, this disease, compared with many former seasons, has spread but little, and produced only a small amount of mortality. In Philadelphia, we learn that some cases of extreme malignancy, equal to the worst of former seasons, have been observed; yet it is remarkable that these few cases have been scattered throughout almost all parts of the city, without exhibiting the contagion so much dreaded, and upon which the propagation of the disease has been supposed, by many, solely to depend. From Baltimore we also learn that malignant cases have occurred in all parts of the city, though few in number collectively taken; and that the contagious dependence of these cases upon one another has not been found possible to be discovered by the most assiduous observers.

A more particular account of this disease in the above-mentioned cities may be expected in our next number.

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DR. ALBERS'S AMERICAN ANNALS.

The learned Dr. Albers, of Bremen, has lately transmitted to Dr. Miller the first volume of a periodical work, published by himself, entitled, "*Amerikanische Annalen der Arzneykunst, Naturgeschichte, Chemie und Physik*,"—"American Annals of Medicine, Natural History, Chemistry and Physics." In this work a minute and satisfactory account is given of the progress and present state of science in the United States. American publications are examined in a candid and liberal manner, and the literary and scientific exertions of our countrymen are exhibited in a respectable light. Besides his attention to other publications, the author presents an analysis of all the more important papers contained in the "Transactions of the American Philosophical Society," and the "Medical Repository."

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COXE'S OBSERVATIONS ON VACCINATION.

Dr. John Redman Coxe has lately published, "Practical Observations on Vaccination, or Inoculation for the Cow-Pock." This work is embellished with a coloured engraving, representing a comparative view of the various stages of the vaccine and small-pox.

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On the 1st of May, 1801, Dr. James Mease, of Philadelphia, was elected a corresponding member of the "Literary and Philosophical Society of Manchester."



**FOREIGN.****TREATMENT OF RANULA, ITCH, &c.**

IT is well known, that in cases of ranula simple incision frequently effects a cure. In some instances, however, and particularly where the cyst is thick, this method is insufficient.

A case of this kind occurred a few months ago, in which a surgeon had five times operated in this manner, but without success. When the child was brought to me, the tumour was so large that it compressed the tongue with great force against the roof of the mouth, so as totally to impede sucking, and even deglutition. In this extremity the excision of a portion of the cyst afforded present relief, and produced a perfect cure.

The next subject on which I shall offer a few remarks is the treatment of the itch; a disease which is sufficiently afflicting and disgusting, without the aid of that infernal drug, brimstone.

Having been frequently disappointed in my attempts to cure it with ointment of white precipitate, and solutions of sublimate, and having observed that the latter caused considerable inflammation of the skin, without proving a certain remedy for the distemper, I combined the two with an unctuous substance; and, from that time (above five-and-twenty years), have never known it fail in a single instance. The form is as follows:

R. Hydrarg. muriat. gr. x. Calcis hydrarg. alb. 3j. Adipis suill. 3 iij. Essent. bergamot. 3j. M. ft. unguentum.

With this ointment the patients are to rub themselves all over every night. The quantity here prescribed must not be used in less than ten nights, even in an adult. Care must be taken not to rub too much on any particular part, especially on the bend of the elbow; otherwise, inflammation and excoriation may be the consequence.

The absurd custom of giving sulphur, or any other medicine, internally, for this cutaneous disorder, ought to be discontinued. I have often known dysenteries occasioned by such practices; and the pretended remedy prove worse than the disease.

The preparation of mercury here proposed seldom affects the salivary glands. Its greatest inconvenience is a troublesome heat, rash, or other effects of too powerful a stimulus applied to the skin; which, if the patient be properly cautioned, may be instantly relieved by substituting a little

plain lard instead of the ointment. This application ought to be continued till the troublesome symptoms are perfectly removed.

A preparation of the same kind, but only of half the strength of that already prescribed, is one of the most efficacious remedies for the tinea capitis; in the cure of which constant care must be taken to keep the surrounding hair as short as possible. By means of this ointment, applied once a day, I have succeeded in the cure of every case in which it has been tried, amounting to many hundreds. One of the patients had laboured under the disease fourteen years; and his father wisely determined to get him cured, if possible, before he put him out as an apprentice.

Many others have been cured by the same remedy, who had been given up as incurable. No internal medicine whatever was exhibited in any of these cases; a sufficient proof that no internal medicine is necessary in such cases, whatever may be the prejudice, or whatever may be the interest of medical men.

The same topical application proves equally efficacious in the case of tetter, and various other affections of the skin.

[*Med. and Phys. Journal.*]

#### USE OF BLISTERS IN DELIRIUM.


The great use of blisters applied on the shaved head in some cases of delirium, is sufficiently known to practitioners; but a remarkable instance of that kind is recorded in Hufeland's useful Journal for Practical Medicine, vol. xi. No. 4. The patient perfectly recovered his senses the next morning, after a blister had been put on the shaved head the night before. The excoriated places were kept open with unguent. basilic. and pulvis cantharid. for ten days; and when the patient seemed perfectly reasonable, the wound was dressed with ceratum saturni, in order to heal it up, which, however, having hardly been effected, the patient was again seized with delirious fits, which increased to such a degree, that recourse was had to another blister, which being kept in suppuration for three weeks, the patient was entirely restored to health. Besides the blisters, proper internal remedies had been employed. The editor of the above Journal relates, in addition to this, a case of apoplexy, in which the application of an actual cautery proved most efficacious. "A lady having been taken with an apoplectic fit, lay in a soporose state, against which all possible remedies had been employed in vain by

the attending physician, when a friend of the patient recommended to apply paper burnt to tinder on the shaved head. This had hardly been done, when the patient arose with vehemence, tore off the cap that had caught fire, and cried with a strong voice, 'Will you burn me!' Against the first intention, the cap had been set on fire by some glowing points in the tinder that were overlooked; and though the skin on the head of the patient was considerably burnt, the patient had the advantage of being perfectly recovered. [*Ibid.*]

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### OBITUARY.

The British prints announce the death of ERASMUS DARWIN, M. D. F. R. S. &c. Author of the *Botanic Garden*, *Zoonomia*, *Phytologia*, &c. &c. on the 18th of April last. Some account of this illustrious physician, poet, philosopher, and ornament of the age, may be expected in a future number of this work.





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## APPENDIX.

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### ARTICLE I.

#### *On DYSPEPSIA.*

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

THE experienced medical practitioner will admit, that a large majority of chronic diseases, and not a small proportion of those of an acute description, owe their origin to indigestion; nor will it be denied by the most intelligent of the profession, that the difficulties in the way of restoring the stomach to a due performance of its digestive function, are such as often to baffle the most approved modes of treatment. It frequently occurs that the ordinary tribe of stomachic and tonic medicines, usually prescribed in dyspeptic affections, affords, at best, but temporary relief; and that, sometimes, by their undue stimulant influence on the stomach, they indirectly induce an additional degree of debility on that organ, with the accustomed train of hurtful consequences, such as nausea, anorexia, and systematic atony. It has repeatedly happened to me to observe an irretrievable progress in dyspeptic affections during the protracted and inefficient employ of stomachic medicines; and on these occasions the failure of benefit has apparently arisen more from an implicit reliance on the sole efficacy of these agents, than on the irremediable nature of the affection.

An inveterate distrust in any thing like uniform medicinal efficiency in the infinitely diversified nature of organic susceptibility, first induced me to try, in obstinate cases of indigestion, the effect of a rigorous attention to a certain plan of domestic management, in conjunction with the usual treatment. The advantages resulting from this procedure have enabled me duly to appreciate the importance of the co-operation, and have farther warranted me in expecting that its *solitary* adoption would in general render the conjoint employ of medicine unnecessary in the cure of dyspeptic disorders.

The treatment alluded to consists in cautiously avoiding mechanical impediments to the process of digestion, and in

counteracting that stomachic languor and irritation which prevent the salutary secretion of gastric juice; an agent so indispensably necessary to the due decomposition and assimilation of alimentary substances.

Extensive experience has now fully confirmed the important fact, that the worst states of dyspepsia, arising from default in stomachic excitability, and gastric secretion, unaccompanied with organic læsion, may be effectually remedied by an appropriate regard to the quantity of diet taken at a time, to suitable mastication, friction over the region of the stomach, and the avoidance of costiveness. The mode of practically applying the conjoint influence of these several aids, consists in limiting the quantity of aliment taken at one time to two ounces; in confining it chiefly to animal food, particularly mutton and pork; in masticating it so long that it may be reduced, by comminution and salival commixture, to a semi-fluid state. This may be repeated once in three hours. No diluent fluids should be taken with the food, nor until one hour after each repast, lest the solvent property of the mixed saliva should be thereby diminished; nor should the quantity of fluid taken at once ever exceed half a pint, nor be repeated oftener than at intervals of three hours.

About half an hour before swallowing the portion of aliment proposed, brisk friction should be performed with a flesh brush over the region of the stomach during at least ten minutes; a similar operation should also follow it. If the irritability of the skin over the stomach should dispose it to inflame, or throw out eruptions by repeated rubbing (which sometimes happens), the surface may be smeared with olive oil previously to performing it: on the contrary, should neither a glowing sense of warmth on the surface, nor any other sensible impression be made by the friction, either powdered mustard-seed, pepper, ginger, or spirit of wine, may be sprinkled over the skin before the application of the flesh-brush.

Flatulent distension, and the aching uneasiness of the stomach connected with it, are speedily subdued by the stimulant effect of the friction; and if the precaution be observed of rubbing circularly from right to left, the redundant gaseous substances extricated, and accumulated in the stomach during indigestion, will be extruded at the pylorus, or lower orifice of the stomach, and transmitted through the intestinal canal; while in the contrary, or a more promiscuous direction, they may escape by the cardia, or upper orifice, and be forced up the œsophagus in sonorous, painful, and unpalatable eructa-

tions. An habitual attention to the removal of costiveness will powerfully aid the beneficial effects of this treatment. No remedy will be found so effectual in subduing this insidious and destructive enemy to health in general, and to digestion in particular, as instituting a regular custom of periodically soliciting an evacuation by voluntary and persevering effort. The morning is the proper season for the attempt; it should on no occasion be omitted, and the trial should be prosecuted during at least fifteen minutes, if the peristaltic power be not earlier excited to adequate motion. A week has been unavailingly employed in this endeavour, but the proposed effect has been attained within a fortnight; and one month has in numerous instances fully established an *habitual* call to intestinal evacuation, under circumstances that previously required the almost daily use of aperient medicines.

Were it necessary to illustrate the conjoint efficacy of this treatment by particular cases, it would be in my power to go into a much more extensive detail than you may think necessary to admit in your publication. It may, however, be proper to remark, that a vast variety of dyspeptic affections, thus managed, have been recorded by me, many of which had been the cause, while others had been the effect of chronic maladies, and the whole of them had been more or less unsuccessfully combated with the usual medicinal means of relief. Cases of a description so deplorably forlorn have been remedied by this management, that it would be much more satisfactory to me to have a similar effect repeated in the experience of others, than by stating them to risk incurring any doubt of the credibility of the relation. Nor has the success alluded to been partial or selected; a degree of uniformity has indeed marked the salutary influence of the practice but rarely found in the medicinal treatment of disease.

In some cases, the cure has been both perfect and permanent; in others, unexpected relief has been afforded; and in all, sufficient benefit has been rendered to encourage an unwearied prosecution of the means.

In reflecting on the mode of remedy here proposed for dyspeptic affections, it may be allowable to observe, that the fashionable employ of medicine on all occasions of disease, has often led to an unguarded neglect of co-operative aid from domestic and self-management; as if the powers of life, and the peculiar conditions of health, were not more under the dominion of *ordinary* than *extraordinary* agents; as if the stomach, for example, were not more likely to return to its regular di-



gestive function, when solicited by the congenial influence of an approach to its natural state, than when disturbed, tortured, and all but disorganized, by the almost intolerable stimulant impressions of *reputed* stomachic medicines; and these too employed (as if the curative intention were to be accomplished by an absolute *fiat*) under a lax regard, or even total indifference to collateral assistance.

The healing art consists in instituting the most appropriate modes of curing diseases, not in uniformly wielding against them medicinal substances.

If health can be regenerated by regulations calculated to reproduce its indispensable conditions, the salutary end of medicine is happily attained, without the loathsome necessity of resorting to the employ of noisome drugs.

Without wishing unduly to curtail the multifarious extent of the materia medica, humanity, it may be allowed, must triumph in every fair opportunity of substituting domestic for medicinal remedies.

While the dyspeptic patient will be satisfied with deriving the desired benefit from the treatment here recommended, the philosophic medical practitioner will readily explain the way in which salutary consequences are likely to result from its employ. The function of digestion is perhaps more scientifically understood than any other in the animal economy. The importance of the gastric secretion is admitted, and a due supply of saliva is also known to be essentially requisite in facilitating the changes that are to be effected on alimentary substances in the stomach.

The supply of the gastric juice and saliva, in due quantity and quality, will depend on the healthy excitability of the stomach and salival glands; thus, in impaired digestion, the attention should be chiefly directed to adjusting these necessary conditions.

In directing a limited quantity of food oppression is obviated, the motive powers of the stomach are adequately excited and unclogged, while the elaborate mastication recommended, and the consequently copious commixture of saliva, leave less to be accomplished by the decomposing influence of the gastric juice.

Friction on the abdomen excites motion, which, by associated efficiency, is propagated to the stomach, and serves to impart additional activity to the digestive process.

Neither similarity of structure, nor direct continuity of connection, subsists between the cuticular surface over the region

of the stomach, and the substance of that viscus; yet an intimate consent of motive power obtains between these several parts, which explains how topical friction extends to the salutary influence of the organ itself.

It is a succedaneum for corporeal exercise, and, by being concentrated on the stomach, proves a more direct remedy in the removal of flatulency, and other morbid inconveniences arising from indigestion, than could be afforded by a more general exertion of the system.

The fertile causes of dyspepsia are repletion and inaction. The combined tendency of these evils is to induce both stomachic and systematic oppression. The necessary demand for nutriment is varied by the degree of voluntary exertion, super-added to the involuntary motions of life; if the former be too limited, morbid repletion, both locally and generally, can only be avoided by a moderate use of diet; on the contrary, if the habitual exercise be carried the length of inducing frequent perspiration, and muscular fatigue, the exigencies for alimentary support will be proportionately great; hence an exact ratio subsists between the exhaustion from exercise and the want of nutritive supply. If this balance, so accurately struck by Nature, were uniformly sustained in the conduct of mankind, dyspepsia, and the hydra train of mischief it is liable to produce, would scarcely be known in the catalogue of human afflictions.

The plan of remedying indigestion here recommended on the authority of abundant experience, is further warranted by the analogy it bears to the agency usually obtaining in the process of natural digestion. In the one case, stomachic oppression is obviated by small portions of food taken at a time, by assiduous mastication, salival commixture, and intestinal regularity; while digestion is much promoted by abdominal friction: in the other, or the ordinary performance of this function, personal exercise becomes a substitute for these precautions; it accelerates the animo-chemical combinations and decompositions, which constitute the motive evolutions of life; and thus requires such an extent of nutritive supply from the digestive function of the stomach, as at once obviates morbid plenitude, and induces salutary hunger.

I am, &c.

ROBERT KINGLAKE.

## ARTICLE II.

PESTILENTIAL DISTEMPERS *at MANCHESTER and LEEDS,*  
*in ENGLAND.*

THE manufacturing towns in England are almost always infected by a pestilential disease, which the inhabitants call low infectious or typhous fever. The vigilance of the boards of health has sufficiently traced their origin to nastiness and filth, derived from human bodies, and accumulated on the persons, in the bedding and habitations of the sick. This accumulation of unclean and pestilential matter is to be ascribed to the poverty, ignorance and carelessness of the victims of this home-bred poison. Through want of alkaline salts to neutralize and absterge their perspired and other excreted fluids, and of air to dilute and waft away the venomous gases engendered by them, the wretched manufacturers fall sick, and often die in great numbers. If the climate of Manchester and Leeds was as hot as that of New-York and Philadelphia, and the people as replete with beef and other animal food, and as much stimulated by distilled spirits, as those of the United States, there can be no reasonable doubt that a true yellow fever would be produced. But in England, the *coolness* of the weather, and the *low diet* of the poor, prevent the formation of so much pestilential air, and the exciting of such high-wrought, acute and malignant symptoms. As a proof of this, the same nastiness which would cause typhus in England, will excite yellow fever if accumulated and transported on ship-board to the coast of Africa or the West-Indies.

There is so much good sense, and so many instructive facts, in the proceedings of the committees for investigating the causes of their endemic distempers, in two of the great manufacturing towns of England, that we conceive we are at once doing service to physic and police in publishing extracts from their addresses to the public. They show that typhous fever, like yellow fever, proceeds from nastiness, and may be prevented by cleanliness and ventilation. See *Med. Repos.* vol. v. p. 194.

No. I. *Manchester Address.*

“The great increase of low and infectious fevers amongst the poor of this town and neighbourhood, during the last and present year, has induced the board of health to renew its in-



quiries concerning the best means of guarding against and suspending a calamity so peculiarly afflicting to the labouring classes of the community. From the information given by the physician of the Infirmary, and other persons employed in attending upon the sick, the board of health are enabled to affirm, that with proper caution on the part of the poor, and due attention of their landlords, the origin and progress of fever, and other infectious diseases, might be greatly counteracted, if not entirely subdued. To effect this desirable purpose, the board earnestly solicit the attention of the poor to the following observations and instructions.

“ 1. *Be careful to avoid living in dark, damp, and confined cellars; or in back streets adjoining to privies, or heaps of offensive and corrupted matter, as this is one of the most common and certain causes of infectious fever.*

“ 2. As fevers are found to prevail most wherever families have been *crowded together in small rooms*, and especially where there is not a sufficiency of beds and bed-covering, it strongly behoves you to guard against the danger arising from such a mode of living: indeed, did you but consider, that one of the surest means of preventing fever, and hindering its spread, is to provide a proper number of *clean beds for the use of your families*, both in sickness and in health, you would be led to lay out every farthing you can save in the purchase of such valuable comforts.—How often have the feelings of your benefactors been hurt, by seeing, in some habitations, an useless and expensive piece of furniture, such as a gaudy clock, or ornamental chest of drawers, *when the miserable husband, his wife, and numerous family of both sexes, have been compelled to lie crowded together in one bed*, for want of any other accommodation! This is *an increasing and a crying evil*, and, as such, demands the serious attention of every poor person who has any regard for the health and morals of his family.

“ 3. Strict attention is necessary to keep your houses and persons in *as regular a state of neatness and cleanliness as your employments will permit*. It is a certain truth, that most fevers arise in those parts of the town where the people pay the least regard to *a cleanly and decent mode of living*; and, since the trouble of half an hour each day is sufficient for the purpose of cleansing your habitations and persons, it must either proceed from a shameful degree of idleness, or a *disgraceful satisfaction in dirt and filth*, that a small portion of your time is not thus employed.—It has been observed,

*that want of cleanliness and fresh air gives rise to that worst kind of fever, called jail-fever, which frequently resembles the fevers common among that class of inhabitants who are least attentive to cleanly habits.*

“ 4. Children who work in cotton mills during the night, are more liable to fevers, and other kinds of sickness, than those who are employed only in the day; but if you are under the necessity of exposing your offspring to night labour, take care that they are not deprived of their sufficient quantity of sleep during the day, and do not suffer them to sleep with their clothes on, or to lie down, till the bed from which the family must necessarily just have risen, has been properly prepared to receive them. It is too often the practice of careless mothers to suffer their children, who are night workers, to sleep by the fire-side, or upon the floor; a practice most injurious to their health, and to the welfare of the family.

“ 5. Let your children be fed and washed before they are sent out to their daily work; and take particular care to wash their feet and legs clean as often as occasion requires; by attention to this simple rule, your beds and apparel will be kept in a more clean and comfortable state, which will serve materially to guard against infection.

“ 6. Be careful to take your meals at stated times; this not only promotes health, but likewise frugality, and, instead of half starving yourselves and families, by living chiefly upon tea, in which there is little if any nourishment, let a part of your diet consist of rice (a most wholesome and cheap kind of food), and soups prepared from meats and vegetables; this kind of diet will enable you to sustain bodily labour, and in a great measure will preserve you from the attack of disease.

“ 7. *Fevers have of late been much increased by poor families coming from a distance, destitute of clothes and money. These are thrust into some damp and dismal cellars, where, from want of beds and proper nourishment, the worst kind of fever is produced, and frequently spreads throughout the neighbourhood.*

“ The board of health consider it also as a very important part of their duty to offer the following suggestions to the landlords of the poor.

“ The prevalence of fever in this town is greatly to be attributed to the improper situation and bad mode of construction of the habitations for the poor. It is a common practice to contrive cellars considerably below the surface of the ground, both to the front and back of each building, where there is

not a sufficient inlet of light, or air, or drains for the purpose of carrying off the water; in consequence whereof, these abodes are damp, dismal and unhealthy, and afflict their miserable inhabitants with colds, fevers, and other diseases. *In many parts of the town, houses are erected, with their fronts opposite to open privies, and joining to accumulations of every kind of filth, and where the space between the fronts of one range of buildings and the back of the other is so narrow as to prevent the circulation of air, or free admission of light.* To such a degree has inattention of landlords to the welfare of the poor arisen, that, in many new buildings, there is an absolute want of any casements, or other means of letting air into the apartments, than by opening the windows: the consequence of this is, that, *from want of a proper ventilation,* the poor become sick; and, when in this state, are liable to suffer injury from the partial admission of air through the panes of the window, which are necessarily broken for that purpose. The necessity of frequently *white-washing the cellars and houses of their tenants* has often been urged to landlords; but it appears, that almost an *universal neglect* of so cheap and salutary a method of preventing disease prevails throughout the habitations of the poor. If landlords would but consider their true interest, they would be desirous to obviate the above-mentioned evils, as, no doubt, the incapacity of the poor to pay their rents arises *chiefly from their being so frequently subject to diseases.*"

No. II. *Advice at Leeds.*

"The following address to the inhabitants of Leeds has been published by a committee appointed to make inquiry respecting the infectious fever that has for some time raged there. —We most earnestly recommend the subject to the attention of the principal inhabitants of all manufacturing towns.

"It appears, from the collected information of the faculty, that a fever of a very contagious nature exists in different quarters of this town, and that, owing to the *confined and unventilated* apartments of those families where it usually takes place, it has, in many instances, proved fatal.

"This is also painfully confirmed by an examination of the parish register, whereby it appears, that although the autumn of last year nearly doubled in general mortality the present, yet the deaths by fever are increased. The mortality, by fever, for the last month, is one half more than the corresponding month of 1800.



“As examples of its highly infectious nature in the close and noisome dwelling of the poor, and of the utter-impracticability of applying proper remedies, we insert the following facts:—The one is in a family consisting of thirteen individuals, five of whom were infected within the first four days, and four more have been since attacked.

“The other case is still more deplorable:—Two forlorn beds, without linen, and covered only with rags, contained six poor adult persons: the fever attacking one by one, soon spread through the whole, and the dying lay stretched on the same miserable bed: yet such was the fatal perverseness of the relatives who attended them, that although wine and medicines were at their command, they could not be prevailed upon to give either, and for two days received neither food nor medicine: the consequences may be easily supposed; the father and mother of the family both sunk under such accumulated wretchedness.

“Facts such as these clearly show the inefficacy of any measures short of actual and timely removal from the place of infection and nastiness. We forbear to multiply them, unwilling to add to the distressing catalogue. Indeed, we feel persuaded, that having appealed to the humanity and benevolence of our fellow citizens, there need not motives of policy to call forth their exertions.

“In Manchester, by an institution of this kind (*i. e.* a house well alkalized and well ventilated, see *Med. Repos.* vol. v. p. 191 & seq.), the number of fever patients were reduced, the first year, from 2880 to 1759, and there was a decrease of 400 burials within the same period.

“In one district, immediately in the vicinity of the fever ward, the fevers were reduced from 400, the average number of fevers previous to opening the fever ward, to 26, the first year.

“In Chester, fever wards were established within the Infirmary so early as 1783, and though one ward is situated within 13 yards of the fever patients, with whom it communicates, on the same floor, by a passage and doors frequently open, yet, during the period of eighteen years, it has never been suspected that the patients in other parts of the house have caught any infection from the fever wards, by any contamination of the atmosphere, nor from any transgression of the rules of prevention.

“Some dwelling-houses are placed at but a little distance from the fever wards, and Stanley Place, inhabited by very genteel families, is not far distant from them.

"The Committee beg leave to call the attention of the inhabitants to these facts, as they prove, that a House of Recovery is by no means detrimental to a neighbourhood in which it is situated.

"In Chester, so salutary have been its effects for eighteen years, that in the spring of 1795, when a very-fatal epidemic raged in Manchester, Liverpool, and other neighbouring towns, only two cases of fever occurred in the Chester fever ward, and not one in the rest of the town.

"It would be the height of scepticism to doubt the impression which facts such as these must have on the mind of an enlightened public; and the Committee feel assured, that an institution, pregnant with so much good, will meet with every due encouragement, liberal support, and patronage, from the rich, cheerful and grateful acceptance on the part of the poor."

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### CORRESPONDENCE.

*Rusticus*, of Massachusetts, may find some experiments in Mr. Kirwan's Essay on Manures, to prove the existence of carbon in soils. The black mould of rich lands abounds with carbon. The water of puddles, pools, ponds and lakes, contains a great proportion of it. When mingled with them, it gives them a dark colour, and, when suffered to subside, it forms a black stratum at the bottom. Peat, turf, bog, marsh and hassock, as well as dark soil in swamps, meadows and new lands, all contain plenty of carbon. Vegetables, as they grow, consume this; and in cultivated uplands, after a few crops of Indian corn, hemp or wheat, so little of it is left, that artificial manuring becomes necessary; and carbon is one of the ingredients of such manure, whether it comes from the barn-yard or elsewhere. It has been asked, why a greater depth of carbonic soil is not accumulated in the American forests? Because, we answer, so many living vegetables, and, among others, trees of vast size, are constantly feeding upon it, and converting it into their nourishment, that there is little opportunity for it, in such places, to accumulate on the earth. When embodied in plants and animals, carbon is set loose again by putrefaction and fire.—*Rusticus* will remember that the diamond is pure carbon in a crystallized form.